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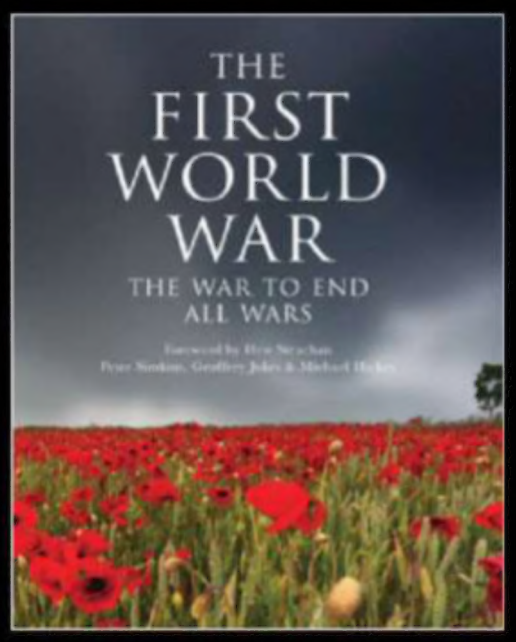

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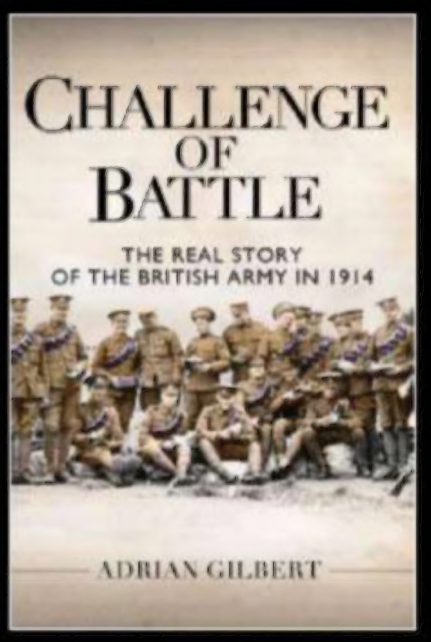

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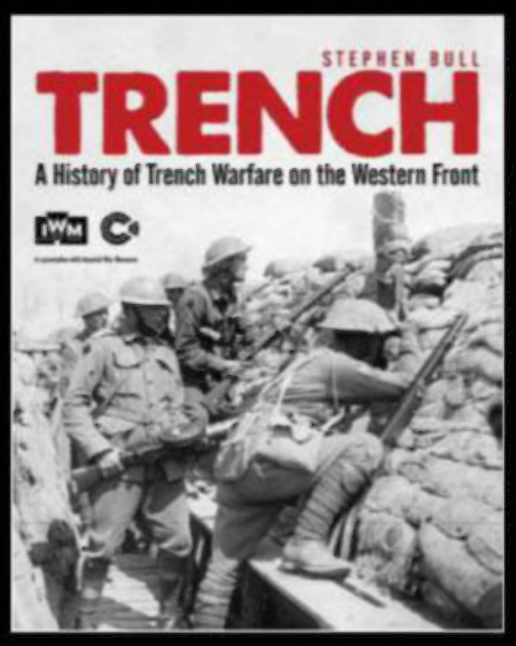

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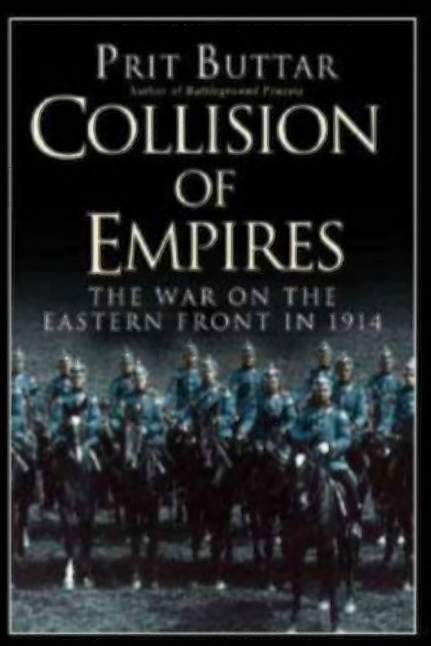

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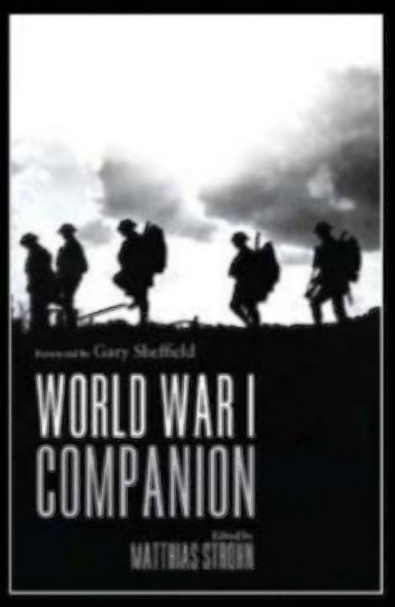

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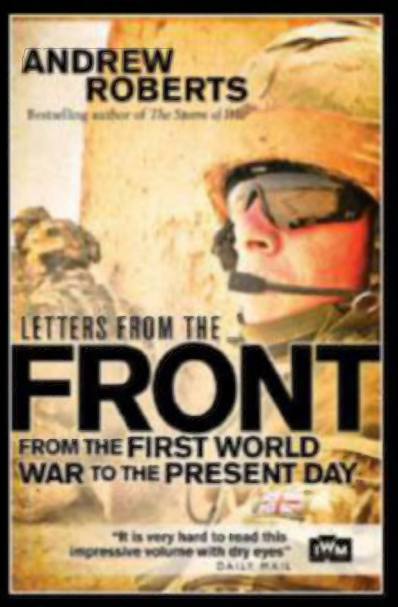

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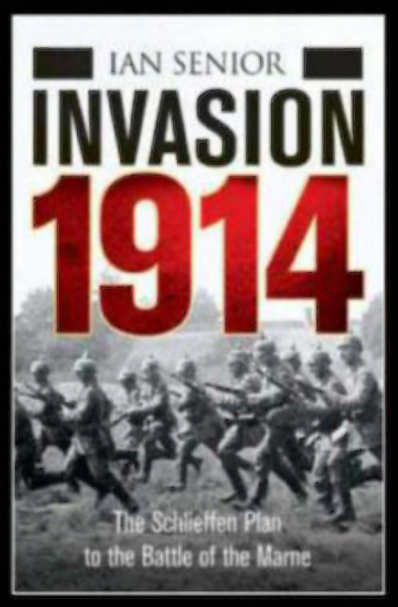

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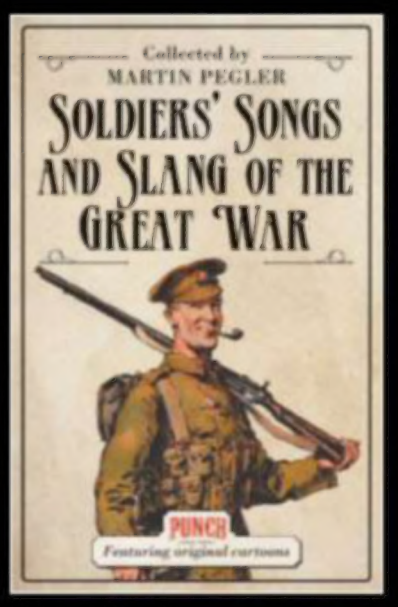

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The 1995 Rugby World Cup proved to be a uniting event for South Africa - delve into the history of sport on page 12

Welcome

Few people have changed the world as much as Genghis Khan. The lord of war united the disparate Mongolian tribes and conquered much of the known world, with shocking brutality at times. He also established trade links, showed mercy to some of his enemies and allowed freedom of religion. You can slash through 35 amazing facts about the Great Khan from page 50.

While it divides opinion between those who love it and those who think it gets too much attention, we can all agree that the history of sport is entertaining; medieval jousting, Roman chariot racing and the Ancient Olympics are far removed from modern-day sports stars. This issue's themed section is on sport, so you can read about the above and much more by sprinting over to page 12.

Christopher Columbus is often held up as an American national icon, but some of the acts he sanctioned against the native peoples of the Americas were awful - discover the truth on page 76. Elsewhere in this issue we discover the training regime of Spartan males and travel to an English country house during WWII where an eclectic group of soldiers, scientists and academics were trying to crack Nazi codes...

Andrew Brown
Editor

Issue 17 highlights

28

Greatest Battles
In 31 BCE, Roman generals Mark Antony and Octavian faced off for an epic sea battle that would determine the very future of Rome.

38

What If
King Charles I's royalist troops had defeated Oliver Cromwell's forces in the English Civil War and the king had never lost his head?

68

Ultimate rich list
Find out the ten richest figures the world has ever seen, from medieval kings versed in combat to 1920s American moguls getting rich quick.

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CONTENTS

Welcome to All About History

KHAN

50 Discover 35 amazing facts about the warlord who made the known world kneel before him in submission

SPORT

12 Dive into the world of sport, from the Ancient Olympic Games through to sportspeople using their celebrity to try and change the world

14 How to
Win a medieval joust and become a hero of an early extreme sport

16 Sporting timeline
The history of sport, from the football World Cup and the Wimbledon tennis tournament to singular events that rocked the world

18 Day in the Life
Join a Roman chariot racer hurtling around the Circus Maximus

20 Hall of Fame
Meet ten sports stars who will never be forgotten – for good and bad reasons

22 Top 5 Facts
Baseball's ultimate slugger, Babe Ruth

24 Inside History
Get the inside track on the first-ever Olympic Games

26 Anatomy of
An American footballer about to play in the first-ever Super Bowl

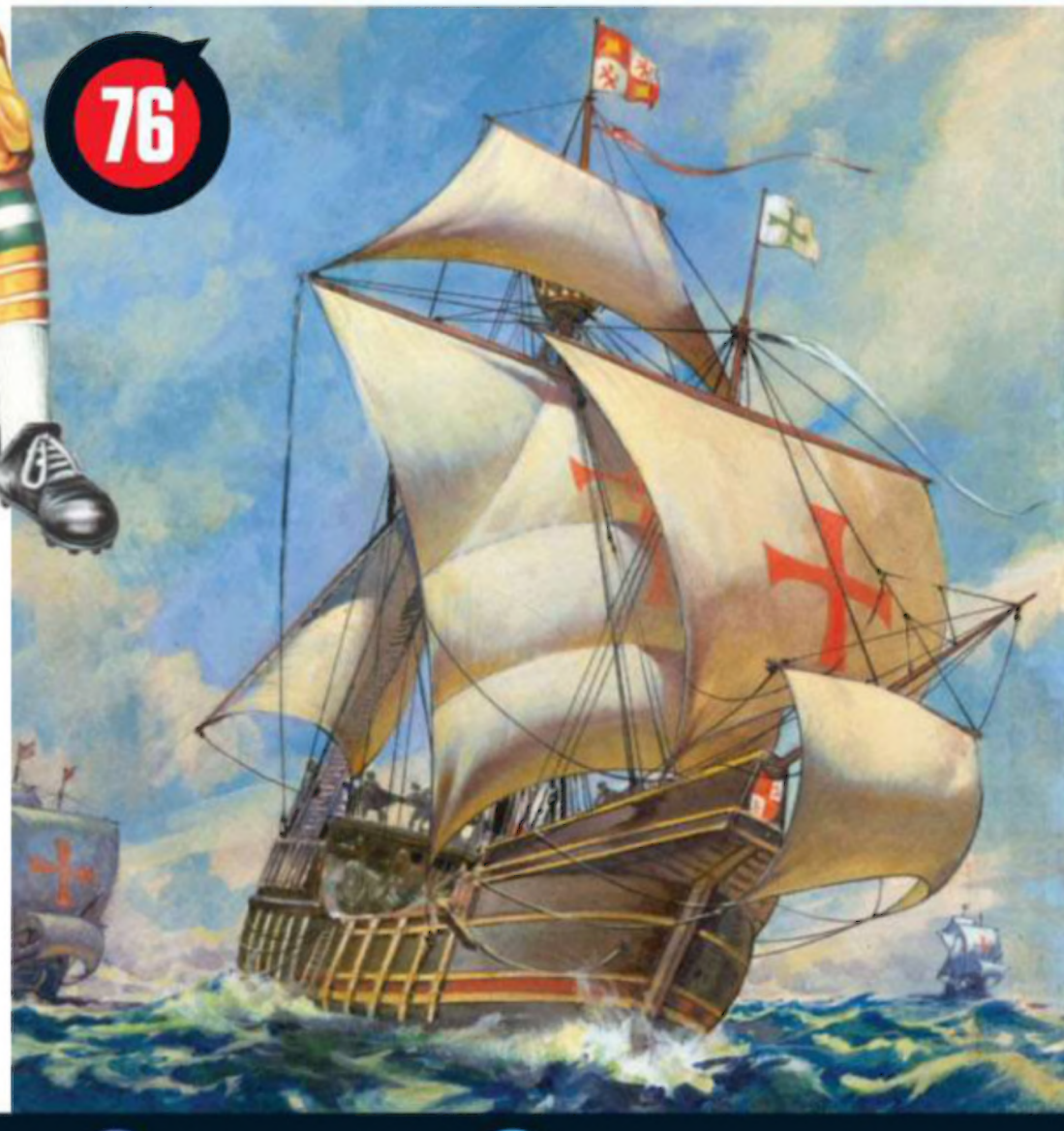
FEATURES

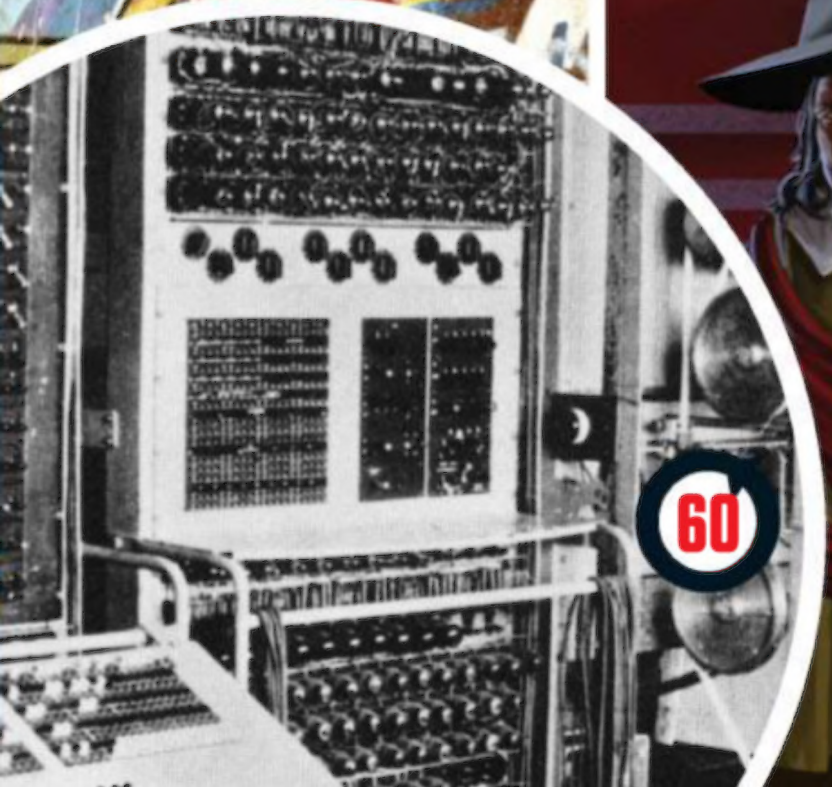
60 Britain's codebreakers
Scientists and academics trying to win WWII by breaking German communication codes

68 The ultimate rich list
From tsars to entrepreneurs, meet history's ten wealthiest people ever

76 Explorer, icon, murderer
Christopher Columbus' questionable actions in the New World cast a shadow over his legacy

84 Warrior state
Sparta was a small state, but produced the world's best warriors – discover their brutal training regime





EVERY ISSUE

06 Defining Moments
Three pictures that are worth a thousand words

28 Greatest Battles
A naval battle at Actium in 31 BCE between the famed Roman generals Mark Antony and Octavian would define the path of Rome forever

32 Heroes & Villains
To some he was a modern-day Robin Hood, but to most of Colombia and the rest of the world Pablo Escobar was a murderous drug lord and a menace to humanity

36 Through History
Take a visual tour through the history of music machines, from the gramophone to modern-day marvels of technology

38 What If?
The English King Charles I's royalist forces had defeated Oliver Cromwell's rebelling Parliamentarians in the English Civil War?

42 Eye Witness
Get a first-hand account of the Chernobyl nuclear disaster from one of those given the dangerous task of cleaning up the leaking radiation

46 Bluffer's Guide
The 1939 World's Fair showed its visitors an age of tomorrow filled with amazing inventions

92 Competition
Your chance to win a television worth over £300 and a fantastic DVD by answering one simple question

94 Your History
A reader shares with us her family story of adventure in Australia and danger in WWI

96 History Answers
Your questions answered on Emperor Caligula, the very first cannon and samurai swords

98 History vs Hollywood
Will we be able to find any drops of historical accuracy in the submarine war thriller *U-571* or will it all sink under the waves?

SUBSCRIBE NOW & GET 3 ISSUES FOR JUST £3 Page 48

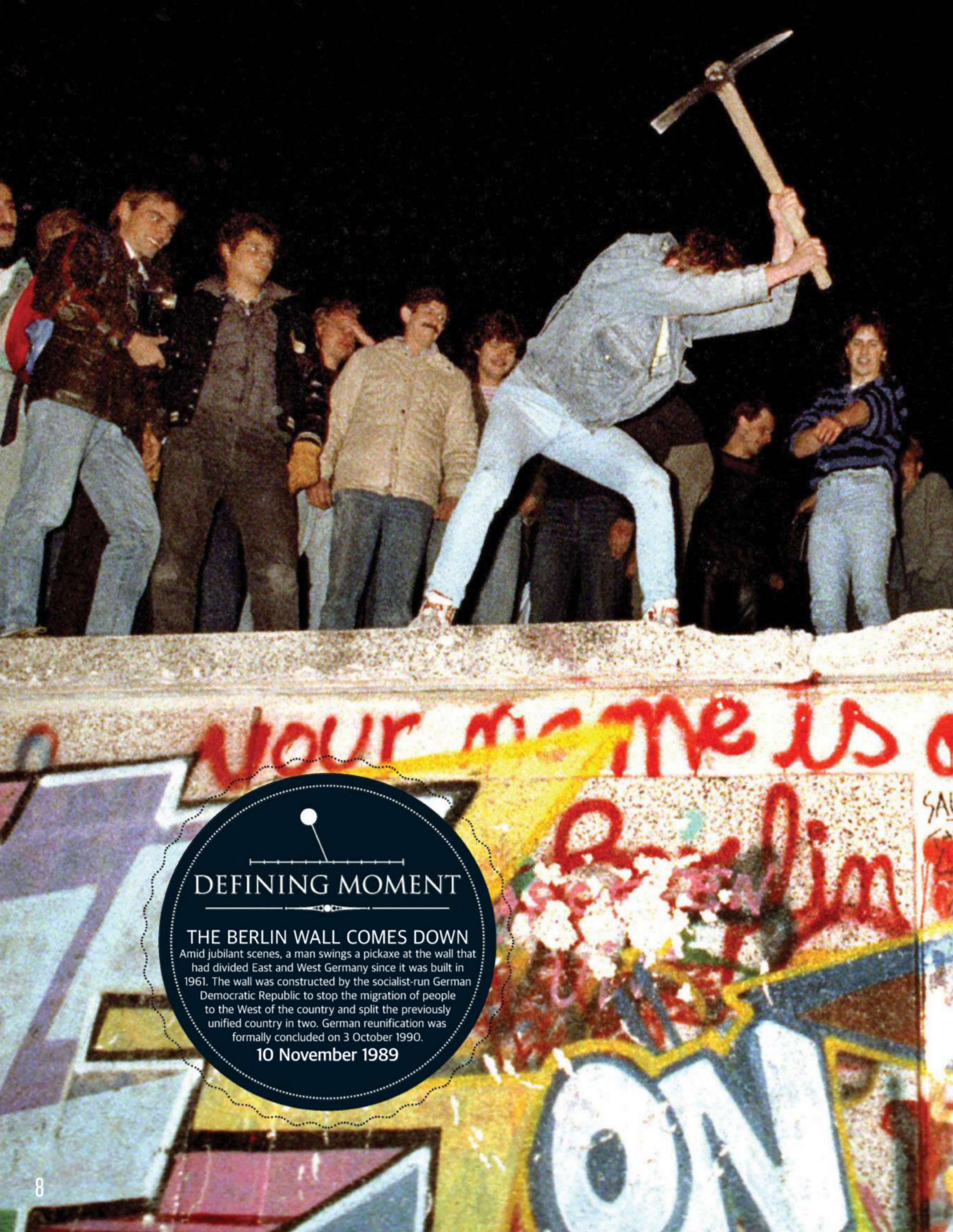
HISTORY IN COLOUR

THE 'UNSINKABLE' SHIP

Made by shipbuilding company White Star Line, the Titanic was the largest ship ever constructed when it entered the water on 31 May 1911. Not only was it gigantic – it weighed 52,000 tons – but it was designed to be the first word in elegance and opulence. The ship famously sunk on its maiden voyage from Southampton to New York when it hit an iceberg and over 1,500 lives were lost.

April 1912

© Colourisation by Dynamichrome



DEFINING MOMENT

THE BERLIN WALL COMES DOWN

Amid jubilant scenes, a man swings a pickaxe at the wall that had divided East and West Germany since it was built in 1961. The wall was constructed by the socialist-run German Democratic Republic to stop the migration of people to the West of the country and split the previously unified country in two. German reunification was formally concluded on 3 October 1990.

10 November 1989

© Alamy

DEFINING MOMENT

SPACE PIONEER

Laika, a stray dog found on the streets of Moscow, undergoes final tests by a physiologist in preparation of becoming the first living creature to orbit the Earth. The animal died from overheating within hours of being in space and not when she ran out of oxygen after several days, as Russia claimed. However, the test did prove that living organisms could survive being launched into orbit.

October 1957

© Alamy

The Maracanã Stadium in Rio de Janeiro, which hosted the 2014 World Cup final between Germany and Argentina

Sport

12 PAGES OF BLOOD, SWEAT AND TEARS

This issue

14 **How to...**
Joust like a medieval knight and win the hand of a fair maiden

16 **Sport throughout time**
From early Egyptian sports and royal tennis to stars with multi-million-dollar endorsements playing in front of tens of thousands of adoring supporters

18 **Day in the Life**
Of a Roman charioteer trying to survive the day's race and gain fame and fortune

20 **Hall of Fame**
Discover ten people who changed the face of sport forever

22 **Top 5 Facts**
America's sporting and cultural icon, baseball legend Babe Ruth

24 **Inside History**
The Ancient Olympic Games

26 **Anatomy of**
A 1960s American football quarterback

Formula 1 champion-to-be James Hunt in front of John Watson at the Dutch Grand Prix in August 1976

Professional sumo can trace its roots back to the Edo period (1603-1868) in Japan as a form of sporting entertainment

Sport can also take on a light-hearted form; here a group of women compete in an egg-and-spoon race

Michael Jordan is considered to be the greatest basketball player of all time - he also showed just how much sports stars could make from endorsements

Lithograph colour print from circa 1887, depicting an early game of baseball in the United States

Former cycling star Lance Armstrong admitted to having used performance-enhancing drugs throughout his career

British tennis champion Virginia Wade won the Wimbledon Women's Grand Slam tournament in 1977

Modern horse racing is outright tame compared to ancient chariot racing

How to WIN A MEDIEVAL JOUST

BECOME A GALLANT HERO OF AN EARLY EXTREME SPORT, EUROPE, MIDDLE AGES

When knights emerged in the Middle Ages, the tradition of jousting tournaments was born soon after. The tournaments tested their horsemanship and ability to handle the famed lance and these tourneys soon began to attract crowds from kings and nobles to poor commoners. The competitions were based on ideas of chivalry and romantic conduct, and at a joust a knight could experience all the thrill and glory of war without the gritty realities of disease and death, although sometimes fatalities would occur in the name of sporting entertainment...

EQUIP YOURSELF FOR THE JOUST

Lance
Made from soft wood with a blunt end that would cause impact but not pierce armour, they were hollow inside, allowing them to break harmlessly on collision.

Helm
A popular helmet used was the frogmouth helm. The distinctive shape was designed to protect the face of the knight wearing it.

Armour
The expensive steel armour was specially made to fit the competitor and also featured the jouster's colours and symbols.

Mount
Horses wore a chanfron, an iron shield, which protected their heads, and were also draped with an ornamental cloth displaying the owner's heraldic signs, known as a caparison.

5 MEDIEVAL SPORTS

STOOLBALL
15TH CENTURY, ENGLAND

An early incarnation of cricket and baseball, stoolball was traditionally played by milkmaids using milking stools as wickets.

ARCHERY
1252, ENGLAND

Archery was seen as so important that all Englishmen from the ages of 15 to 60 were ordered to carry a bow and arrows at all times.

COLF
13TH CENTURY, FRANCE/BELGIUM

Colf was an early ancestor of golf in which a wooden ball was hit with iron-headed clubs.

QUARTERSTAFF CONTESTS
15TH CENTURY, ENGLAND

Involving fights with a long shaft of hardwood, opponents would face off against each other, similar to modern-day fencing.

ICE-SKATING
17TH CENTURY, NETHERLANDS

Contestants in medieval ice-skating would strap the shinbones of cattle to their feet and skate on frozen ponds and lakes.

01 Select a lady

As romance plays a major role in the tournament, it is essential for all knights to choose a lady to 'fight' for. The best selection is a beautiful lady who is married to a man of higher rank. This lady will hopefully bestow you with a favour such as a scarf, veil or sleeve to wear during the joust. The more intimate the garment, the luckier the favour is believed to be.

02 Charge!

Suited up and mounted on your horse, the signal to begin the joust is marked by a trumpet charge. You begin by racing along the right hand of a dividing bar toward your opponent while gripping your lance and shield. It is not uncommon for the horses to reach a speed of 50 kilometres (30 miles) per hour galloping down the 55-metre (180-foot) field.

How not to... celebrate at a joust

Jousting tournaments were commonly held to celebrate special events and occasions, and in 1559 a tournament was held at the Place des Vosges in France. This match celebrated the peace declared between Henry II of France and Philip II of Spain, which ended the Italian War of 1551 to 1559. It was also held to celebrate as the marriage of Henry II's daughter, Elizabeth, to King Philip II, which was intended to cement the peace agreement and ensure the two countries remained allies. However, the celebrations quickly ended in disaster when the French king Henry was mortally wounded during the joust by a lance fragment that pierced his eye and entered his brain. He died on 10 July 1559 from septicaemia despite the desperate efforts of the royal surgeon and his staff. The death of Henry II was a major factor in the eventual end of jousting as a popular pastime and sport.

03 Strike with your lance

Aim your lance at your opponent; you will get one point for breaking it on their chest and two for the helmet. It's important that you break the lance or it's counted as a glancing blow and you get nothing. You will only have three lances per match, so make them count! Knights that remain on their horses turn and charge again, hence the name 'tourney.'

04 Unseat the opponent

It's great if you can rack up points by breaking your lance, but the real way to become a jousting star is to knock your opponent off his horse. This will not only get you three points whether the lance breaks or not, but will give you an instant win. Henry VIII was famously unhorsed at a tournament and fell unconscious for two hours.

05 Battle on foot

Jousts are an elimination event where the winners move up to the next level, so you will need to win several times to be champion. If your three lances have been shattered, the battle continues on foot. Arm yourself with a sword and face your opponent. Usually five blows are exchanged before the loser is expected to yield to the dominant fighter.

06 Celebrate your victory

After your victory, feel free to enjoy the spoils of war by choosing to take either your opponent's armour or horse. Prizes will be awarded in a ceremony where all combatants embrace each other in the spirit of companionship and chivalry. Enjoy your newfound fame in a grand and decadent feast that includes music and dancing.

4 JOUSTING HEROES

WILLIAM MARSHAL

1147-1219, ENGLAND

Marshal earned enough money from two seasons of jousting in France to become one of the richest men in England.

JEAN LE MAINGRE

1366-1421, FRANCE

A French crusader, Maingre was often portrayed as embodying all the chivalric traits expected of a knight.

SIR JOHN HOLLAND

1352-1400, ENGLAND

Made a knight of the Garter, this English nobleman won an array of tournaments and later went on to conspire against Henry IV.

EMPEROR MAXIMILIAN I

1459-1519, AUSTRIA

The emperor was an enthusiastic fan of jousting and his efforts into perfecting the sport earned him the nickname 'the last knight.'

© Ed Crooks

Sport across history

OLYMPIC GAMES

GREECE 776 BCE

Held among the city-states of Greece, the Ancient Olympic Games were held in honour of the god Zeus and comprised a number of events, encompassing variants of boxing, wrestling, athletics, chariot racing and the pentathlon. The Games were always held in Olympia, Greece, and only free-born Greek men were permitted to enter. After over 1,000 years, the Games were abolished by Roman Emperor Theodosius in 393 CE. They would not return until nearly 1,500 years later.

Chariot racing becomes Olympic event

GREECE 680 BCE

With the Olympics already established in Ancient Greece, the introduction of chariot-racing would see the sport's popularity increase even further.

Taking place on a 240-metre (800-foot)-wide track and consisting of 12 laps, the four-horse chariot races quickly became a prestigious event and would go on to become one of the events most commonly associated with the Ancient Olympics.

A sporting timeline

Early sports in Egypt
Evidence indicates that Ancient Egyptians partook in forms of wrestling, weightlifting, rowing and athletics, among many other types of sport.
2000 BCE

Polo first played
The popular horse-riding sport is thought to have its origins in Persia around this time, where it is known as 'the Game of Kings.'
600 BCE

A painting depicting a game of polo

At the races
The first recorded horse race meet is held at Roodee Fields in Chester, England. The town's racecourse is still affectionately referred to as 'the Roodee.'
1540

Jack Broughton's academy
The boxing champion opens a training centre in Haymarket, where he teaches 'the mystery of boxing, that wholly British art.'
1740

Jack Broughton brought boxing to the masses

First serve in Wimbledon
The first British tennis Grand Slam event is held, with Spencer Gore – who was also a cricketer who played for Surrey – winning the first competition.
1877

National Basketball League
The first pro basketball league is set up in Philadelphia, Pennsylvania. It is disbanded six years later, only to return in 1937.
1898

2000 BCE | 500 BCE | 0 | 1400 | 1600 | 1700 | 1800 | 1900

Wrestling added to Olympics
From the 18th Olympiad onward, wrestling is included in the Ancient Olympic calendar.
704 BCE

First instance of hockey being played
Known at the time as 'keretizein', it is first played in Greece, with the participants using a horn-like stick.
550 BCE

Origins of tennis
Royal tennis – also known as court tennis, due to it being a popular pastime among royalty – is first played in France.
15th century

It is believed tennis was first played in France

First boat race
The first boat race between Oxford and Cambridge Universities is held on the Thames, with Oxford's team coming out on top.
1829

Queensberry rules set
Written by John Graham Chambers, these set in stone many of the rules that define boxing to this day, like the use of gloves and three-minute rounds. **1867**

The Ashes
The English cricket team lose a home test to Australia. After the loss a newspaper stated that English cricket had died and the body should be cremated, leading to years of rivalry. **1882**

New Olympics
The ancient event is brought back after a 2,672-year hiatus, and is held in Athens, the birthplace of the original competition.
1896

Sumo wrestling can trace its origins back centuries

Stepping into the circle

JAPAN 23 BCE

The first sumo wrestling bout was believed to have been fought in around 23 BCE, in front of Emperor Suijin. It was reportedly won by a figure known as Sukune, who has since become the patron saint of sumo wrestlers. Since then, the sport has blossomed into an important cultural pastime in Japan. Many ancient traditions are still carried out and life as a sumo wrestler is highly regimented by the Japan Sumo Association, which was set up in 1925.

The Open Championship is more than 150 years old

First Golf Open Championship

SCOTLAND 1860

The Open Championship – the oldest of the four major golfing tournaments – is played for the first time on 17 October at Prestwick Golf Club in Scotland.

The first tournament played host to eight entrants – all of them professionals, as per the rules. Comprising three rounds of the 12-hole course, the contest was keenly fought. Despite the presence of the much-fancied Tom Morris, the inaugural championship would go to Willie Park Sr – a feat he would go on to repeat three more times in 1863, 1866 and 1875.

A Webb across the Channel

ENGLAND/FRANCE 1875

On 24 August 1875, steamboat captain Matthew Webb became the first man to swim the English Channel.

Having made one failed attempt on 12 August, he attempted it again from Dover 12 days later, swimming in a zigzag course in the breaststroke style. Escorted by a number of boats and coated in porpoise oil, he withstood strong currents and jellyfish stings to reach Calais after 21 hours and 45 minutes of swimming, during which time he had covered a distance of 64 kilometres (40 miles) in total.

Webb became the first person to swim across the Channel

Ali called himself 'the greatest', and he probably was

MUHAMMAD ALI KNOCKS OUT SONNY LISTON

USA 1965

A rematch was always on the cards after Ali defeated Liston in the WBC Heavyweight Championship bout at Convention Hall in Miami Beach on 25 February 1964. It's likely that few have been as bitterly contested or anticipated since.

The event itself, however – taking place on 25 May at the Central Maine Youth Centre – was short and sweet. Midway through the first round, Ali knocked Liston down with a left jab. It was a blow Liston didn't get up from, and one that cemented Ali's status as the world's greatest boxer.

Tour de France starts
The Tour de France is set up after a suggestion by journalist Géo Lefèvre to increase the circulation of cycling magazine *L'Auto*. The first race is won by Maurice Garin. **1903**

First Winter Olympics held
Developed in association with the Summer Olympics, it takes place in Chamonix, France, with the events including bobsleigh, hockey and Nordic skiing. **1924**

Bobby Jones achieves golf Grand Slam
The amateur golfer becomes the first – and to date only – person to win all four major golf competitions in the same year. **1930**

To date, no one has matched Jones' milestone

Roger Bannister's legendary mile
The British runner and doctor runs a mile in three minutes and 59.4 seconds at Iffley Road Track, Oxford, the first to run such a distance in under four minutes. **1954**

'Battle of the Sexes'
Billie Jean King overcomes Bobby Riggs in straight sets in this exhibition tennis match between the former champions in Houston, Texas. **1973**

Miracle on ice
Coached by Herb Brooks, the mainly amateur US men's ice hockey team surprisingly defeats the Soviet Union team in a thrilling encounter. **1980**

South Africa win Rugby World Cup
The hosts win in stunning fashion in their first tournament after the abolition of apartheid. Nelson Mandela – wearing a Springboks top – attends and hands the trophy to captain Francois Pienaar in person. **1995**

1910 1920 1930 1940 1950 1960 1970 1980 1990 2014

First-ever Grand Prix
The premiere Grand Prix event takes place at Le Mans, France, with Renault's Ferenc Szisz of Hungary taking the podium. **1906**

The World Cup kicks off
13 teams enter the inaugural competition – although not England, who view it as beneath them – with hosts Uruguay taking home the trophy. **1930**

Owens' success in Berlin put the focus back on the sport amid political turmoil

Jesse Owens goes for gold
The US athlete wins four gold medals at the Berlin Olympics, flying in the face of the ruling Nazi regime's postulating of Aryan supremacy. **1936**

Munich terrorist attack
Tragedy strikes the Olympics as 11 Israelis are kidnapped and killed by Palestinian faction Black September. **1972**

11 athletes lost their lives in the Munich terrorist outrage

A perfect ten in Montreal
Aged 14, Romanian gymnast Nadia Comaneci is the first woman to be awarded a perfect score of ten at an Olympic event. **1976**

Senna's death
Legendary Formula 1 racer Ayrton Senna dies in a crash at the San Marino Grand Prix. His death leads to safety reform in F1, with better crash barriers and reduced engine power. **1994**

England's World Cup

ENGLAND 1966

In one of the most memorable events in British sporting history, England defeated West Germany 4-2 at Wembley Stadium on 30 July. Managed by Alf Ramsey, his so-called 'wingless wonders' (after their narrow 4-3-3 formation), captained by West Ham's Bobby Moore, stormed to victory thanks to a strike from Martin Peters and a Geoff Hurst hat-trick, of which his second goal still causes controversy to a dispute over whether it actually crossed the line.

It is still the most-watched sporting event ever on British television, with an audience of 32.6 million viewers.

Queen Elizabeth II presents the World Cup trophy to Bobby Moore

Super Bowl I

USA 1967

The first-ever Super Bowl – a 'World Championship' game contested between the winners of the American Football League (AFL) and National Football League (NFL) – took place on 15 January 1967 between the Kansas City Chiefs and Green Bay Packers, with the Packers ultimately coming out on top. Today, the Super Bowl is second only to the UEFA Champions League final as the world's most-watched annual sporting event.

Phelps celebrates after winning his eighth gold medal

Michael Phelps goes for gold

CHINA 2008

The 2008 Olympics in Beijing saw US swimmer Michael Phelps make history by taking home eight medals, the greatest-ever haul for a single Olympian. His medals were in the 100m and 200m butterfly, the 200m freestyle, the 200m and 400m individual medley, the 4x100m and 4x200m freestyle relays, and the 4x100m medley relay. This record will probably not be broken for a while.

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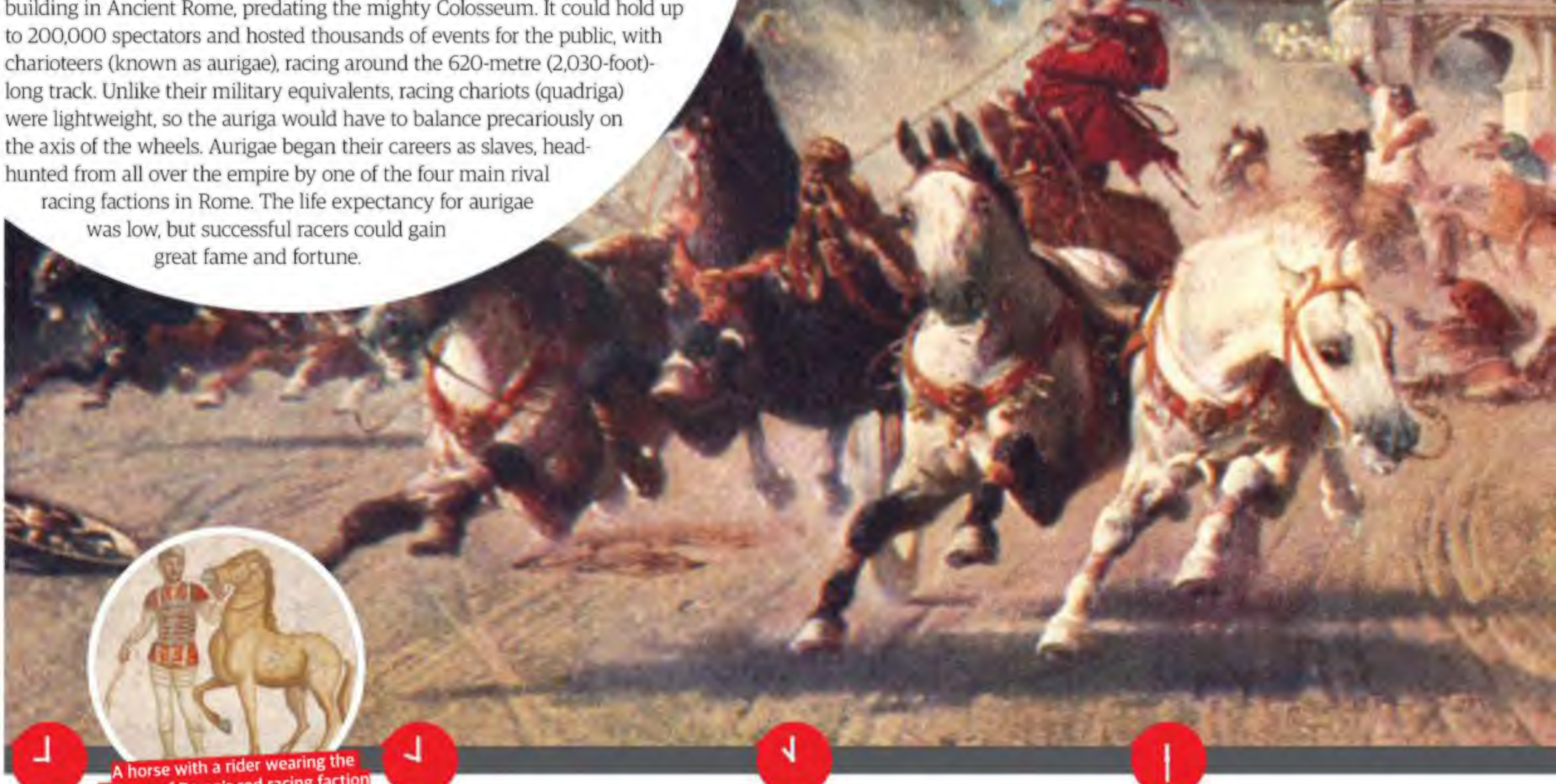
Day in the life

A CHARIOT RACER

THE DEATH-DEFYING SPORTSMEN RACING FOR GLORY IN THE CIRCUS MAXIMUS, ROME, CIRCA 329 BCE

Though it dates back to Ancient Greece, chariot racing found great popularity in Roman society. The Circus Maximus, or 'greatest circus', was the largest public building in Ancient Rome, predating the mighty Colosseum. It could hold up to 200,000 spectators and hosted thousands of events for the public, with charioteers (known as aurigae), racing around the 620-metre (2,030-foot)-long track. Unlike their military equivalents, racing chariots (quadriga) were lightweight, so the auriga would have to balance precariously on the axis of the wheels. Aurigae began their careers as slaves, head-hunted from all over the empire by one of the four main rival racing factions in Rome. The life expectancy for aurigae was low, but successful racers could gain great fame and fortune.



A horse with a rider wearing the colours of Rome's red racing faction

PREPARATION AT THE STABLES

Each chariot team paid handsomely for the empire's finest horses and the animals were often prized higher than most aurigae. Before a race, the stable would be busy with servants preparing the quadriga with the faction's colours. The conditor - overseer of the stable - would be ensuring all the horses and the aurigae were ready for the race ahead.

TRAINING FOR THE MAIN EVENT

The horse at the far left of the four pulling the chariot would be the best trained, as it would have to be fearless when sprinting next to the spina, the central island running at the centre of the circus track. Each auriga would be skilled at controlling all his horses, which sometimes numbered as many as eight - they directed with their left hand and whipped with the right.

SABOTAGE, BETTING AND CURSING

The bitter rivalry between the racing factions was felt just as strongly by their supporters. There are accounts of curses written into tablets, applying to the gods to bring misfortune to the opposing charioteers. Horses would sometimes be poisoned by rival fans, or even the stable staff of an opposing faction, so even before the race the chariot racer had to be on their guard.

OPENING PARADE

A great procession, led by the main sponsor of that day's race - yes, there were sponsors even back then - would begin the day's events. It was usual for certain gods to be selected to be honoured on race day, so priests carrying statues of Mars and Jupiter, for example, would also be in the procession. Musicians and the teams would also be in the parade, flying the respective colours of their faction to the assembled crowd.

How do we know this?

Chariot racing is first mentioned in Homer's *Iliad*, with Achilles holding races and games. The Roman poet Juvenal also wrote on the popularity of the racing, referring to the "bread and circuses" that kept the common people entertained. Gaius Appuleius Diocles was a famed racer whose career lasted an astonishing 24 years. His rise through the racing factions of Rome from the age of 18 is recorded and even accounts for the 1,462 races he won.

Chariot races often ended in fatalities, with aurigae crashing at incredible speeds

"If a charioteer crashed, he would have to cut himself free from the reins or likely be trampled to death"

Crashes were common and would often cause a pile-up near the inside track

STARTING POSITIONS

Up to 12 chariot teams, three from each faction, would gather at the start line in the carceres, or starting gates, that were built across the width of the track. Each charioteer would strap the four reins of the horses around his waist, so he could better control the animals with his weight alone. They would all be looking for the mittere signum, or signal to start the race, given by an official, such as a magistrate or city praetor.

RACING

At the start of the race there would be an instant scrap to gain a good position on the course, which was as close to the spina as possible. Racers would gain the upper hand on their opponents by colliding with their chariots, as well as spurring their horses on with a whip. If a charioteer crashed, he would have to quickly cut himself free from the reins with his knife or likely be trampled to death by his competitors.

VICTORY LAP

The victorious charioteer would be presented with a palm branch and a laurel by the race official. The entire race team would receive prize money and would parade around the Circus to the cheers of their supporters. Particularly successful chariot racers were held up as heroes – particularly by the 'mob' – and often able to save enough to buy their own freedom. There are even examples of racers who became extremely wealthy.

PARTY AT THE CLUBHOUSE

Each of the chariot-racing factions in Rome – the red, green, white and blue – had club houses located throughout the city. Here fans and stable staff would gather to celebrate victories and praise their charioteers, even if they merely survived the deadly races. The life expectancy of chariot racers was so short that being alive at the end of the day was cause for celebration.

© Alamy, Corbis

Hall of Fame

SPORTS STARS WHO CHANGED THE WORLD

From those fighting for racial and sexual equality to others who made the world sit up and take notice of their sports, meet ten ground-breaking sportspeople

Even before the 1988 Olympics there had been suggestions Johnson was on steroids

Billie Jean King was a sports star and equal rights activist at the same time

Appuleius Diocles

LUSITANIAN 104-UNKNOWN

Charioteers were the sports stars of the Roman Empire and they typically raced for one of four teams, each identified by different-coloured clothing. Romans supported their chosen faction as keenly as modern-day football fans. Diocles raced for the Whites, Greens and Reds over a 24-year career – remarkably long considering that many charioteers died in races. In his career he won 1,462 times in his specialist event, four-horse races, with one horse contributing to 200 of those victories. Diocles was well rewarded for his efforts and his career winnings would have bought enough grain to feed Rome for a year – estimated at a staggering £9 billion ($15 billion) in today's money.

BILLIE JEAN KING

AMERICAN 1943-PRESENT

King was already one of the most successful tennis players of all time when she began to fight for equality between men's and women's tennis. She campaigned for equal prize money at Grand Slam events and helped found the first professional tour for women. In 1973 she became the first president of the Women's Tennis Association and won a Battle of the Sexes match against former men's champion Bobby Riggs. King also founded the Women's Sports Foundation. Tennis remains a trail blazer in women's sports – seven of the world's ten top-earning female athletes are tennis players.

Gladiators were expensive to train, house and feed, so most fights weren't fought to the death

BEN JOHNSON

CANADIAN 1961-PRESENT

Johnson was the sprinter who made drug taking in sport an international issue and ensured it couldn't be swept under the carpet any more in athletics. After winning bronze at the 1984 Olympics, he improved to win gold in 1988 against his great rival Carl Lewis. Three days later, he was found to have taken steroids in a drugs test. Johnson was stripped of his medal and the world record he set a year earlier. It was not the first drugs controversy, nor the last, but that the winner of what many consider to be the most high-profile Olympic event was a drugs cheat drew attention to drugs in sport like never before.

Six of the eight finalists in the 100 metres Olympic final in 1988 were implicated in drug taking at some stage of their athletics careers

Spartacus as depicted in Hermann Vogel's *Tod De Spartacus*

Spartacus

THRACIAN CA 109 BCE-71 BCE

Unhappy that he was destined to entertain crowds in violent Roman sporting arenas, Spartacus helped lead an escape of fellow slaves from his gladiator school. The fighters spent two years on the run, defeating several attempts to capture them and seeing numbers increase to over 100,000 as other slaves flocked to their side. Only the might of the Roman legions under the military command of Marcus Crassus was enough to suppress them. Although ultimately unsuccessful, Spartacus' rebellion has inspired many freedom fighters since.

During a parade in New York to celebrate his success, someone handed Owens a paper bag. When he opened it up later, he found it contained $10,000

JESSE OWENS

AMERICAN 1913-1980

The 1936 Olympics in Berlin were supposed to be a propaganda coup for Hitler but Owens spoiled the party. For a black man to win four gold medals, including the prestigious 100 metres, meant the Olympics could not be used to promote Nazi theories of Aryan supremacy. Yet reports that deliberately Hitler snubbed Owens by refusing to shake his hand are exaggerated - Hitler congratulated only German victors, and only on the first day. Owens showed the world the folly of Hitler's Aryan ideals, though, with his stunning performances.

Smith and Carlos' statement on the podium affected the civil rights movement in the US

Smith and Carlos both intended wearing two gloves, but Carlos forgot his. They shared Smith's - so Carlos gave the Black Power salute with his left hand

Tommie Smith

AMERICAN 1944-PRESENT

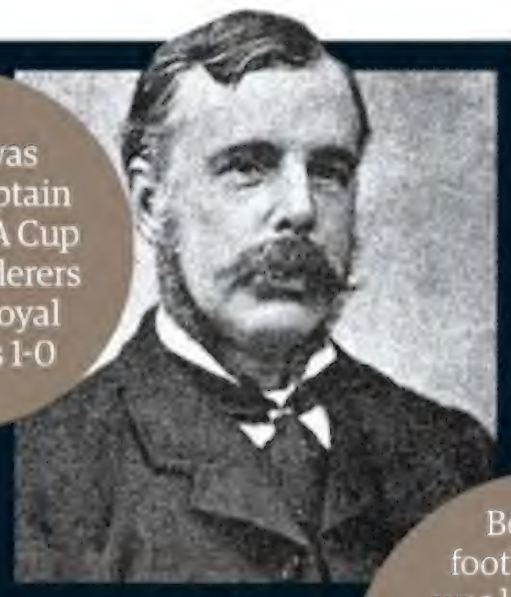
Tommie Smith won the 200 metres at the 1968 Olympics but he doesn't make our list for that alone. When the US national anthem played at his medal ceremony, he dropped his head and raised a gloved fist in the Black Power salute. Third-placed John Carlos made the same gesture. It was a controversial moment, criticised by the International Olympic Committee and other authorities, but it highlighted the frustration that many black people felt and brought the matter to the world's attention.

CHARLES ALCOCK

BRITISH 1842-1907

A Victorian sporting all-rounder, Alcock was a prime mover in the evolution of both football and cricket. He was the first-ever footballer to be ruled offside and the first captain of Middlesex County Cricket Club. As Secretary of the Football Association, Alcock was one of the men responsible for the first football international, between England and Scotland in 1870, and was a driving force behind the creation of the FA Cup in 1871. In cricket, he arranged the first Test match in Britain, between England and Australia at The Oval in 1880.

Alcock was the first captain to lift the FA Cup when Wanderers beat the Royal Engineers 1-0



William Webb Ellis

BRITISH 1806-1872

While playing football for Rugby School against Bigside, William Webb Ellis caught the ball and then ran with it. By breaking the rules he had invented a new sport, named after his school - or so the story goes. The truth is more complicated; rugby evolved gradually and the rules adapted over time. Yet Webb Ellis remains an iconic figure in rugby union history and the sport's World Cup trophy is named after him.

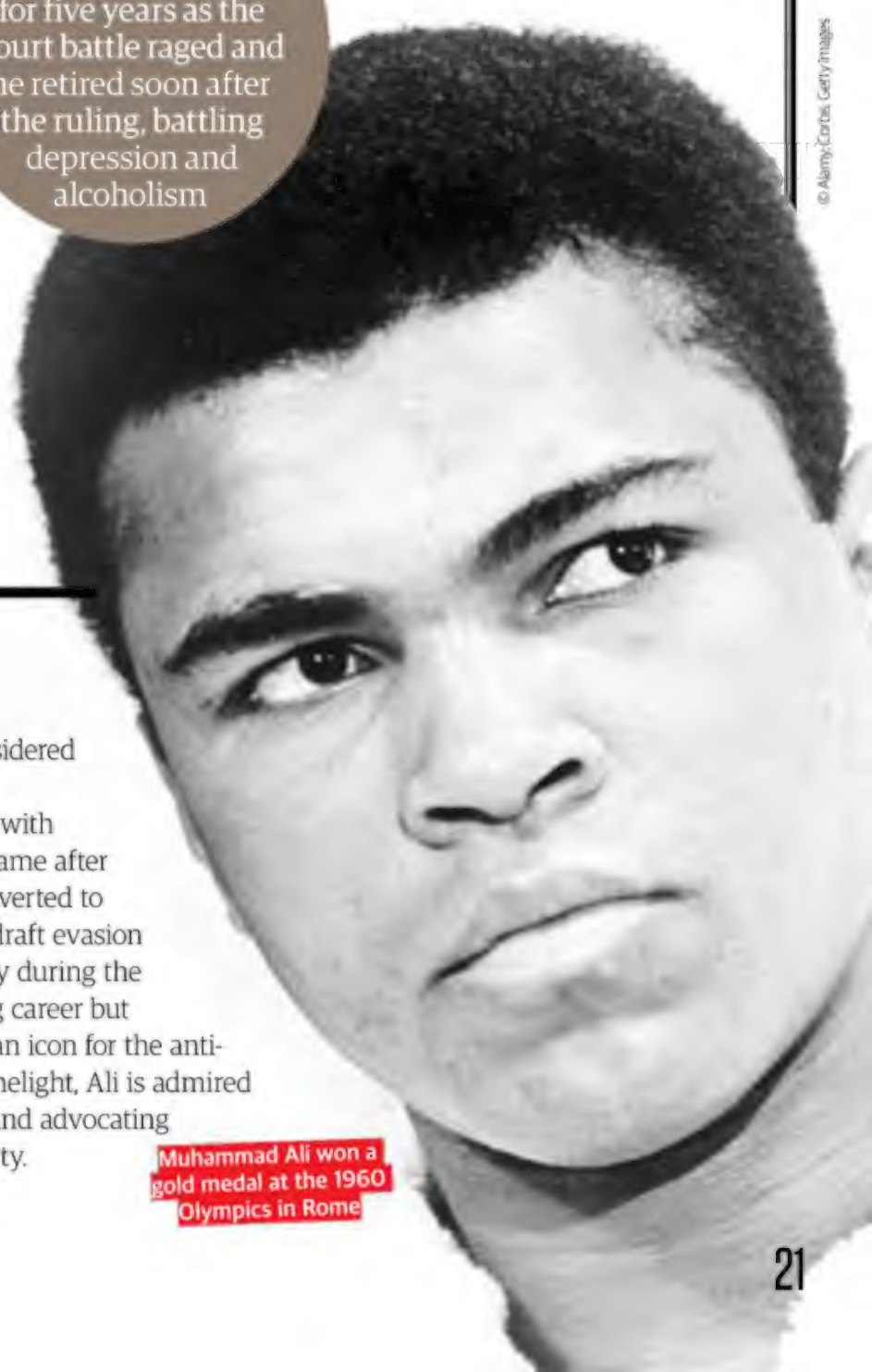
William Webb Ellis is at the centre of the myth of how rugby came into existence

Jean-Marc Bosman

BELGIAN 1964-PRESENT

In 1995, a journeyman footballer tried to move from RFC Liege to Dunkerque at the end of his contract. This battle ended up at the European Court of Justice, which ruled that footballers were free to move clubs when their contracts expired. This occurred at a similar time as new bigger television deals were being agreed, so much of this new wealth found its way into the players' pockets. Football had been changed forever thanks to this obscure lower-league player.

Bosman's football career was left in limbo for five years as the court battle raged and he retired soon after the ruling, battling depression and alcoholism



Muhammad Ali won a gold medal at the 1960 Olympics in Rome

MUHAMMAD ALI

AMERICAN 1942-PRESENT

Self-styled 'The Greatest', Ali is generally considered the best boxer of all time, but he became an international icon for more than just his skill with his fists. Born Cassius Clay, he changed his name after he won the World Heavyweight title and converted to Islam. Three years later, Ali was arrested for draft evasion after refusing to be conscripted into the Army during the Vietnam War. He lost four years of his boxing career but eventually won the legal battle and became an icon for the anti-war movement. Known for his love of the limelight, Ali is admired for his grace and style in the ring, quick wit and advocating religious freedom, racial justice and civil liberty.

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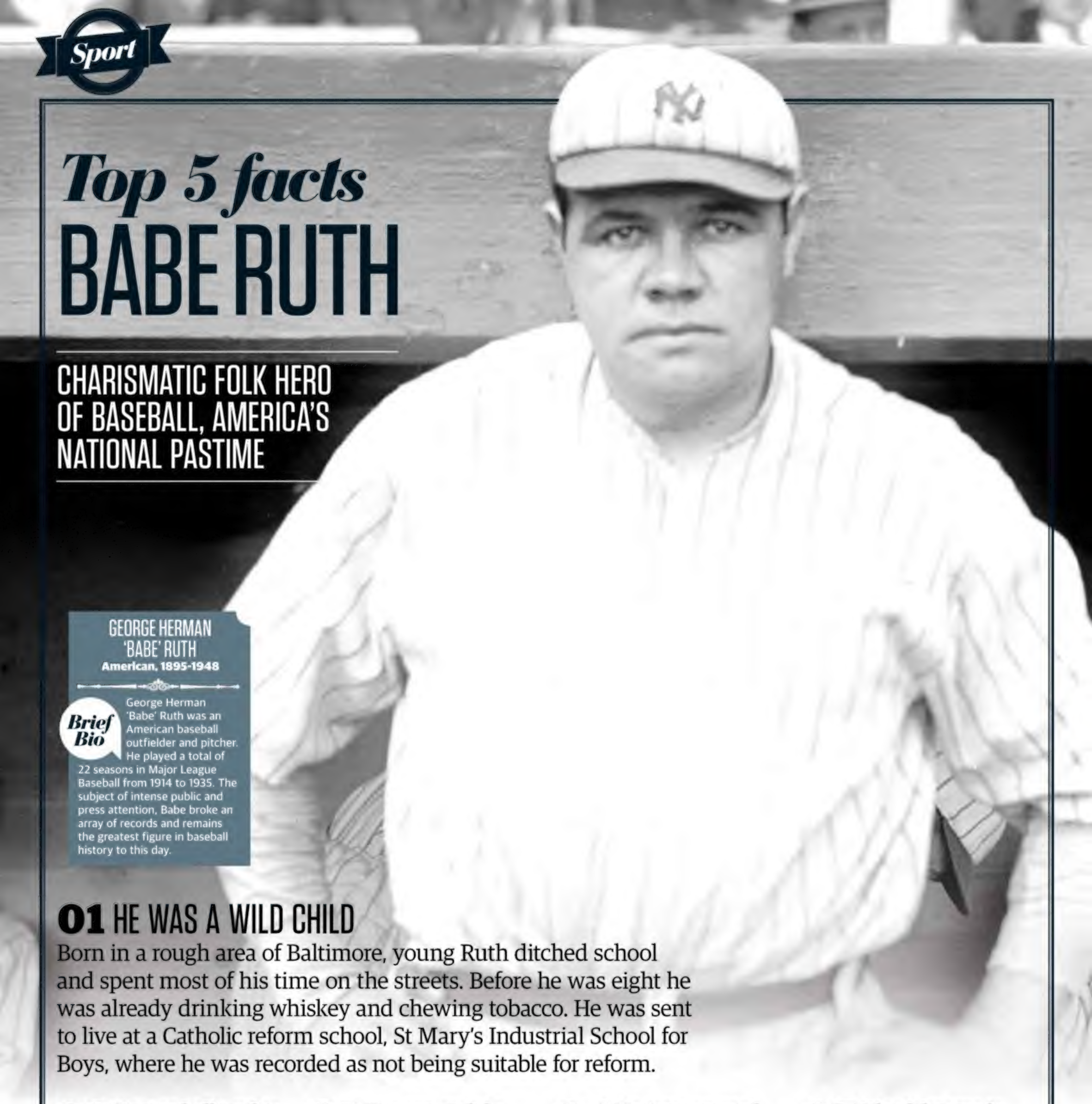
Top 5 facts
BABE RUTH

CHARISMATIC FOLK HERO OF BASEBALL, AMERICA'S NATIONAL PASTIME



GEORGE HERMAN 'BABE' RUTH
American, 1895-1948

Brief Bio

George Herman 'Babe' Ruth was an American baseball outfielder and pitcher. He played a total of 22 seasons in Major League Baseball from 1914 to 1935. The subject of intense public and press attention, Babe broke an array of records and remains the greatest figure in baseball history to this day.

01 HE WAS A WILD CHILD

Born in a rough area of Baltimore, young Ruth ditched school and spent most of his time on the streets. Before he was eight he was already drinking whiskey and chewing tobacco. He was sent to live at a Catholic reform school, St Mary's Industrial School for Boys, where he was recorded as not being suitable for reform.

02 He was believed to perform miracles

When 11-year-old Johnny Sylvester fell off a horse and was hospitalised, Ruth promised to hit a home run for him. He proceeded to hit four home runs in the series and visited the boy who eventually recovered from his injuries. This led to the myth that the boy experienced a miraculous recovery as soon as the home run was hit.

03 You can cash in with his rookie card

The first collectable baseball card featuring Babe Ruth was printed in 1914 by the Baltimore News. It shows a very young Ruth as a rookie and was issued with both a blue and red front. There are only ten still known to be in circulation, and in 2013 a red version of it was sold for a healthy $450,300 (£267,000).

04 No team wanted him as manager

Ruth had a strong desire to become an MLB manager, and unsuccessfully ran for the job of Yankees manager several times, even threatening to leave unless he got the job. The reason for his repeated failure was summed up by Ed Barrow, the Yankees' general manager, "How can he manage other men when he can't even manage himself?"

05 His nickname is still a mystery

Ruth had many nicknames; The Great Bambino, the Sultan of Swat, The Big Fellow; but the origin of 'Babe' is not known. The accepted story is that a young and nervous Ruth followed manager Jack Dunn everywhere, and the other players on the Baltimore Orioles quipped, "There's Jack with his newest babe."

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INSIDE HISTORY

ANCIENT OLYMPIC GAMES

TRYING TO WIN FAME AND ACCLAIM AT THE ANCIENT OLYMPICS, GREECE, FROM 776 BCE

There were four athletic contests in Ancient Greece, called panhellenic games: Nemean Games, Isthmian Games, Pythian Games and the Olympic Games. The latter were the most famous (so that years were counted in Olympiad, the period of four years between Games). The first-ever Olympic Games is thought to have been held at Olympia in 776 BCE; they only lasted one day and consisted of one competition, the stadion race, a foot race of about 190 meters (620 feet). Later, more events were added and the duration of the Games was established as five days (the last one for the awards ceremony). Some of the most popular competitions were fights, chariot races and races in armour, but there were no team competitions or ball games. Although women could compete in other festivals, the Games were reserved for men, and only those of Greek origin.

Prytaneion

Next to the Temple of Hera was the Prytaneion, where the priests and magistrates lived. Inside was an ever-burning fire, in honour of Hestia, the goddess of hearth and home. The prime function of the priests was overseeing the religious aspect of Olympia; no sacrifice, ceremony, or swearing-in of judges or contestants could be held unless at least one of the Prytaneis was present.

The Sanctuary of Olympia

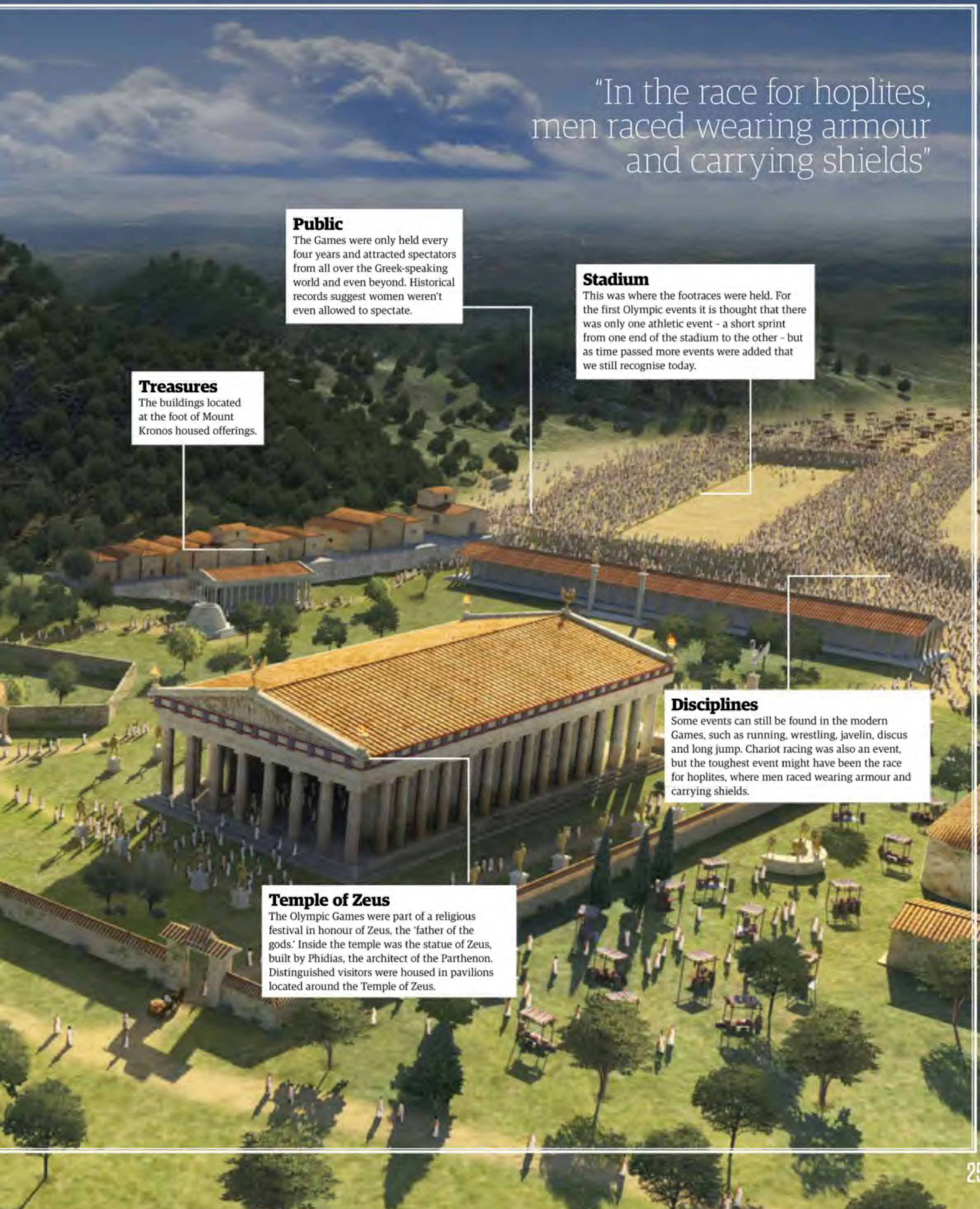
The Sanctuary is the name given to the site of the Olympic Games. It was under the control of the city-state of Elis and contained temples of Hera and Zeus and a famous statue of Zeus, one of the famed Wonders of the Ancient World. To the east, tracks for pedestrian runners and chariots were located and west housed a building to accommodate the athletes and the arena, a space where wrestlers could train.

Wreath and glory

In most of the Games performers usually compete nude, which was not considered unusual. In the Temple of Zeus, winners received a prize of a laurel wreath and the glory of the public.

How do we know this?

It is believed that the ancient Olympic Games actually first took place before 776 BCE, but this is the date of the first written record of them. We know that a cook named Coroebus won the only event - a footrace - and became the first Olympic champion. There are original sources that provide details about the events and competitors, and a number of books have been written about the ancient Olympic Games. One of the most useful when writing this article was Nigel Spivey's *The Ancient Olympics*.



"In the race for hoplites, men raced wearing armour and carrying shields"

Public
The Games were only held every four years and attracted spectators from all over the Greek-speaking world and even beyond. Historical records suggest women weren't even allowed to spectate.

Stadium
This was where the footraces were held. For the first Olympic events it is thought that there was only one athletic event - a short sprint from one end of the stadium to the other - but as time passed more events were added that we still recognise today.

Treasures
The buildings located at the foot of Mount Kronos housed offerings.

Disciplines
Some events can still be found in the modern Games, such as running, wrestling, javelin, discus and long jump. Chariot racing was also an event, but the toughest event might have been the race for hoplites, where men raced wearing armour and carrying shields.

Temple of Zeus
The Olympic Games were part of a religious festival in honour of Zeus, the 'father of the gods.' Inside the temple was the statue of Zeus, built by Phidias, the architect of the Parthenon. Distinguished visitors were housed in pavilions located around the Temple of Zeus.

BALL

ITS ROOTS WERE IN RUGBY.

The official ball throughout the period was the 'Wilson Duke.' There hasn't been much aesthetic change since, with the traditional brown colour and white laces kept. Before this, the balls were direct descendants from rugby balls but are now different both physically and aerodynamically.

SKIN COLOUR

HOW SPORT HELPED PAVE THE WAY FOR CIVIL RIGHTS

In the very early years of American Football there were black players and the first black coach, Fritz Pollard, was appointed in 1921. However, from 1934 to 1946, there was not a single black player in the NFL. The African-American Kenny Washington signed to the Los Angeles Rams in 1946 and since then the sport has become one of the most multiracial in America with players - white or black - being judged on performance rather than skin colour.

NAME AND NUMBER

GRABBING THE ATTENTION OF THE TV AUDIENCE

The first televised game was broadcast in 1939 and the first Super Bowl in 1967 had over 24 million American viewers tuning in (compared to over 100 million for the most recent game). Television viewers gave an added importance for names and numbers to be added to the jerseys so the armchair audience could tell what was going on.

THE Anatomy of AN NFL PLAYER

AMERICAN FOOTBALLER ABOUT TO PLAY IN THE FIRST-EVER SUPER BOWL, USA, 1967

KNEE PADS

PROTECTION OF THE LOWER BODY

The knees get quite a battering in gridiron so players of the era wore tough yet comfortable pads to protect their legs. Their stamina was stretched even further at the end of the decade when in 1970 the NFL merged with the AFL (American Football League) to form a sports league with an extra eight teams.

HELMET

VITAL PROTECTION FROM THOSE BIG HITS

Prior to the 1960s, helmets were made out of heavy leather, but as technology improved, plastic helmets emerged. In 1948, the Los Angeles Rams became the first team to have a logo on their headgear and by the 1960s almost every team had a helmet insignia.

JERSEY

SOAKING AND SWIMMING IN SWEAT

Buying replica jerseys in this era was popular although not as widespread as the merchandise mania that grips NFL today. The 1960s jersey was made of much heavier materials than today and lighter apparel such as 'Under Armour' was not introduced until as late as 1996.

SHOULDER PADS

NOT JUST BIG IN THE '80S...

Shoulder pads in the 1960s were heavier than their modern-day equivalent, but still protected the player from the rough and tumble of blocks and tackles. Their weight was reduced after a move from leather to plastic, which made the players more agile but still resulting in a slightly slower game than today's vintage. The first-ever Super Bowl between the NFL champions the Green Bay Packers and the (AFL) champions Kansas City Chiefs featured some heavy hitting. Green Bay won the game, 35-10.

BOOTS

HOW ONE MAN CHANGED THE WORLD OF NFL FOOTWEAR

NFL boots were always black in colour until maverick New York Jets quarterback Joe Namath decided white boots were the way forward. By the 1970s different-coloured boots and designs were everywhere, but before Broadway Joe's revolution, shoes, like the ones worn by legendary quarterbacks such as Bobby Layne, were strictly black.

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THE LONG-AWAITED BATTLE

The war against Antony was expected by Octavian, as he had been preparing for the eventual conflict many years prior. He had already annexed Dalmatia, which gave him access to a road linking Italy and Gaul to the Balkans, and his general had captured Methone, one of Antony's allied towns, which was located in the southwest corner of the Peloponnese in southern Greece.

THE GREAT COMMANDER

Mark Antony made his name with his string of victories commanding Julius Caesar's armies, but he was yet to prove his skill in fighting at sea. Octavian knew this and refused to engage Antony directly on land. As Antony's isolated army grew tired and hungry he had no choice but to take the fight to the water.

SPEEDY STRATEGY

Octavian's general Aquilla took advantage of Antony's slow and heavy fleet by utilising the quick manoeuvrability of his own ships. Three or four of his smaller vessels moved toward the large galleys, barraging them in quick attacks. When Antony's crews tried to respond Octavian's men would quickly row away.

A SECRET PLAN

The ancient historian Dio Cassius argues that Antony didn't want to fight at Actium and the main plan was to escape to Egypt with his lover Cleopatra. Either way, his abandonment of his men cost him not only his reputation but also the war and ultimately his life.

BATTLE OF ACTIUM

IONIAN SEA, 2 SEPTEMBER 31 BCE

The year was 44 BCE and Julius Caesar was dead. The great Roman leader had been slaughtered on the Senate floor by a number of assassins, including his old allies Brutus and Cassius, and his nation was plunged into a brutal and violent civil war. In this power vacuum three men came together and formed a ruling force known as the Second Triumvirate - Octavian, Caesar's adopted son and legal heir ruled the west, Mark Antony, the beloved general ruled the east and Lepidus, a close ally of Caesar's, oversaw North Africa. After crushing the assassins and the rumblings of those who wished a return to the ways of the old Republic, peace finally seemed to have been restored in Rome.

Not everything was as it seemed, though. Under the surface unrest was bubbling between Octavian and general Mark Antony. Keen to avoid war, Octavian had his sister Octavia married to Antony, but even that could not keep him away from his dangerous mistress. Mysterious and seductive, Antony had fallen completely under the charm of Cleopatra of Egypt, just as Caesar had done before him. Knowing full well of the rift it would cause, Antony moved to Egypt to live with his lover, abandoning his wife and with it the allegiance of the Roman public.

As Antony spent his days with the pharaoh and the children she had borne him, his reputation in Rome was crumbling. Convinced Antony vied to be the sole ruler of Rome, Octavian and his propagandists ran a smear campaign against his name, claiming he had broken Roman law by marrying the foreign woman. Antony was not helped by his own military disaster in the Parthian War, where his Roman forces were crushed by the Parthians. But it was his quest to elevate Caesarion, Cleopatra and Caesar's son, as the true heir of Caesar with the title 'King of kings' that was the last straw for Octavian. The named heir of Caesar declared war against Cleopatra and with her, the disgraced Mark Antony.

Although a host of Octavian's enemies hurried to Antony's side, Caesar's adopted son enlisted the aid of his close friend and brilliant general Agrippa. Under Agrippa's command, Octavian enjoyed a host of early successes and managed to disrupt Antony's supply lines in the Gulf of Ambracia near Actium. Suffering from a lack of supplies and the pressure of a queen eager to return to Egypt, Antony began to plan for battle and finally emerged from Actium harbour on 2 September 31 BCE.

What proceeded was an equally matched battle at sea where neither side was able to grasp an advantage. As the two forces clashed, Cleopatra made a sudden about turn and commanded her forces to retreat and return to Egypt. Confused and panicked, Antony followed his lover and doomed the remainder of his fleet.

It was a year after this devastating defeat when Octavian's forces finally crushed Antony's in Alexandria. After receiving news that Cleopatra was dead, Antony fell upon his own sword. Cleopatra was very much alive, though, and she tried to appeal to Octavian, but her seductress' powers finally failed her. Faced with being paraded through the streets as Octavian's captive, she took her own life. Octavian executed Caesarion and established himself as the first Roman emperor, taking on the name Augustus. Augustus would come to rule a developing, peaceful and prosperous Roman Empire until his death in 14 CE, then aged 75. The long and glorious age of Roman emperors had begun with a sea battle at Actium.

Octavian

GALLEYS 250
INFANTRY 16,000
ARCHERS 3,000

OCTAVIAN
LEADER

Julius Caesar's adopted son and heir, Octavian became known as Augustus after founding the Roman Empire as the first emperor.
Strength Wise enough to give military command to Marcus Agrippa.
Weakness An average general with wavering public support.

LIBURNIAN FLEET
KEY UNIT

A type of light galley that allowed the crew to rain down arrows and stones on their enemy.
Strength Easy to manoeuvre and take advantage of any mistakes.
Weakness Lack of strength makes it vulnerable to ramming attacks from larger ships.

PLUMBATA
KEY WEAPON

Heavy and sharp lead-weighted darts crafted from iron with double the range of a full-sized arrow.
Strength The extended range makes it capable of wounding and even killing men from a great distance.
Weakness The plumbata requires a great amount of skill and training to fire successfully.

01 A BAD START

In a cruel twist of fate, Antony's forces suffer from a vicious malaria outbreak while they wait for Octavian's fleet. As a result, many of his massive ships are undermanned. Antony sets fire to the ships he can't man and clusters the remainder together tightly in anticipation.

02 A fatal betrayal

After discovering Antony's battle plans from his defected general, Quintus Dellius, Octavian stays out of the ramming range of Antony's massive ships. Because of this, Antony is unable to carry out his strategy to stay within the protection of the shore. As the morning of 2 September reveals a clear and calm day Antony has no choice but to move away from his position and engage the enemy directly.

03 OCTAVIAN MAKES HIS MOVE

Octavian orders his fleet into formation before the gulf. As Antony's large, intimidating ships draw close, Octavian's famed general Agrippa suddenly extends his left wing in an effort to row around Antony's advancing right flank.

10 The final few

Not all of Antony's ships follow him in retreat, but losing so many ships in a single blow dooms the remaining vessels. They fight long into the night, but the calm weather quickly turns foul and a violent gale batters the galleys. Unable to fight any longer, Antony's remaining fleet surrenders and most of the 300 ships taken by Octavian meet a fiery end.

04 The forces meet

Lucius Policola, leading Antony's right wing, moves outward to meet Agrippa's advancing forces. As a result his formation detaches from Antony's centre and a gap is formed. Antony's troops are inexperienced and this manoeuvre throws the entire centre fleet into confusion.

09 The beaten commander

Clear of any danger, the heavy wooden towers are thrown from Antony's ships and he is finally able to catch up with Cleopatra's fleeing ships. Cleopatra allows him to board her royal galley but Antony cannot bring himself to face his lover. He walks to the bow of the ship and holds his head in his hands for many hours, unable to utter a word to anyone.

08 ANTONY FLEES

Having missed Cleopatra's signal, Antony watches from his ship, stunned by his lover's abrupt departure. The panic and confusion spreads quickly to his lines and disorder reigns supreme. Antony quickly sets off in pursuit of Cleopatra and sails hastily unfurl as 40 ships hurry to follow their fleeing leader.

07 The queen retreats

Observing the battle's progress from the rear of Antony's forces, Cleopatra's anxieties grow. Finally deciding she has seen enough, she gives the signal to retreat to open sea. The 60 Egyptian ships sail away on a convenient breeze from the battle.

06 THE BATTLE ESCALATES

As both forces are unable to ram one another because of the close proximity, the naval battle transforms into a land battle at sea, with men equipped with shields, spears and arrows attempting to board their opponent's ships. The two sides attack and retreat over many hours, with no advantage falling to either, and heavy fatigue descends over both sides. From Antony's decks burning missiles cascade down and cover the ships in a blanket of thick black smoke.

05 Battle of the centres

With Antony's centre exposed and in disarray, Lucius Arruntius, who commands Octavian's centre, sends his ships forward at full speed, straight into the enemy centre. A major battle erupts.

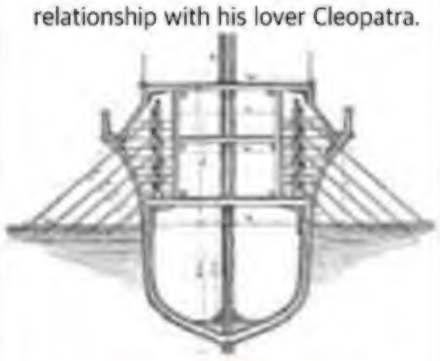
Mark Antony

GALLEYS 290
INFANTRY 20,000
ARCHERS 2,000

MARK ANTONY

LEADER

Famed politician and general, his affair with Cleopatra strained his relationship with Rome.
Strength A vast fleet and strong support from the powerful Roman consuls in the Senate.
Weakness Distracted by his relationship with his lover Cleopatra.



QUINQUEREME FLEET

KEY UNIT

Gigantic, intimidating galleys that featured huge rams and could be very heavy.
Strength Armoured bronze plates ideal for ramming.
Weakness Slow and hard to manoeuvre, small failures could prove disastrous.

BALLISTA

KEY WEAPON

Huge towers built onto the decks of ships, which catapulted missiles at the enemy.
Strengths Shot with massive force, devastating if on target.
Weakness A miss caused massive delays and left the men on board extremely vulnerable.

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"Escobar gained control of the cocaine business by taking leading drug lord Fabio Restrepo out of the game"

Three Colombian presidential candidates were killed on his orders

Escobar graduated from running streets scams and minor crimes to becoming one of the world's most wanted criminals

Heroes & Villains

Pablo Escobar

The drug dealer who murdered anyone who stood in his way but was held up as a modern-day Robin Hood by large parts of the Colombian people

Written by David Hutt

On a hillside above Medellín, a neighbourhood of 12,000 people is affectionately called Barrio Pablo Escobar by its inhabitants. Built in the 1980s, the brick houses have plumbing, electricity and gardens, there are schools and hospitals, and for a decade no one had to pay a single peso in rent. All of this was funded by Pablo Escobar, Colombia's world-famous 'drug lord'. The King of Cocaine. The head of the Medellín Cartel. The billionaire. The murderer, tyrant and corrupter. The Colombian Robin Hood.

At the height of his powers, Escobar's Medellín Cartel controlled almost 80 per cent of the global cocaine trade and he was the seventh richest man in the world. His rule was ruthless and brutal. Opponents were murdered and police and politicians were bribed. His trademark strategy became known as 'plata o plomo' (cash or lead). You either took a bribe or you took a bullet. Yet Escobar was also a philanthropist. He gave back to the Colombian poor, a Robin Hood with a thick moustache and an AK-47. More than two decades after his death, some Colombians still say prayers for 'Don Pablo', while others give God their thanks that he is no longer around.

Born in 1949 in Envigado, a small city near Medellín, young Pablo grew up in poverty. Although not as destitute as other Colombians, daily necessities were hard to come by. In his teens, Escobar moved to Medellín where his criminal career started with petty scams and car thefts.

> At its peak Escobar's Medellín Cartel could make $60 million every single day

Legend has it that as a child Escobar declared that he would become a millionaire. He didn't disappoint. Moving up the ranks, he became a bodyguard for local gangsters and made a name for himself when he kidnapped a Medellín executive and earned $100,000 as a ransom. At this time the cocaine business was just emerging in Colombia, yet growing demand from the US led Escobar to believe big money was to be found in smuggling.

Escobar's operations started small. In 1975, at the age of 26, he began purchasing coca paste in Bolivia and then refining it in a two-storey house with his brother. Then he would hide the cocaine in old plane tyres and smuggle it into Panama, piloting a light aircraft he purchased for the task. Before long he was importing almost $500,000 worth of cocaine into Panama. The costs of this relatively small-scale smuggling were high, though. Bribing managers of airports could cost up to $300,000 for a round trip, which meant larger shipments were needed for big profits.

Mere months of starting out, Escobar gained control of the cocaine business in Medellín by taking leading drug lord Fabio Restrepo out of the game. Then with the three Ochoa brothers (Jorge Luis, Juan David and Fabio Jr) he formed an operation that would become the Medellín Cartel, although Escobar was firmly in control. That is why he was called 'El Padrino' - the 'Godfather.' With control of the city, Escobar's operations expanded rapidly and by 1978 the

Colombia has a long history of violence and instability

Life in the time of Pablo Escobar

'La Violencia'

Between 1948 and 1958, Colombia was ravaged by a civil war between the main political parties. Paramilitary and guerrilla forces loyal to each party fought one another, which led to between 200,000 to 300,000 deaths and more than a million people being displaced. The political stability that existed beforehand was eroded and many of the paramilitary and guerrilla groups formed during this decade continued to plague Colombia up until the 21st century.

Poverty

When Pablo Escobar was born, Colombia was a very poor country. Over half of the population lived in rural areas, less than half of children went to school and the life expectancy was below 50 years old. The majority of people lived in houses with earth floors and worked as agricultural labourers or peasant farmers. For many drug smuggling offered a way to riches not possible through legal avenues.

Cocaine is king

In 1859 German chemist Albert Niemann isolated the cocaine alkaloid from coca leaves, making it possible to produce the powdered drug that is known today. 55 years later, production and consumption was prohibited by international law, but this didn't affect demand. By the 1970s, Colombia became home to the largest and most sophisticated production and trafficking countries in the world and the price of cocaine on streets around the world fell considerably.

War on drugs

Since the 1960s the United States has spent trillions of dollars on their 'war on drugs.' In 2012, several presidents of Latin American countries met to state that the war had been a failure and created as many problems as it solved. This war still rages inside Colombia, although attention has recently shifted northward to Mexico, where cartels are disrupting politics and society much like Escobar did in the 1970s. The synthetic production of drugs such as 'crystal meth' means that cartels no longer have to produce their drugs in South America.

Since the 1960s armed conflict in Colombia has claimed over 300,000 lives

A country in crisis

For large parts of its history Colombia has been the scene of conflict and battles, from the 16th century when it came under Spanish rule to its war of independence, which resulted in the United States of Colombia in 1863, and then two years later the Republic of Colombia. In more recent times much if this conflict has not been with external forces, but internal, with competing ideologies and beliefs causing conflict and bloodshed. Known as La Violencia, a ten-year civil war occurred from 1948 to 1958 between the country's Conservative and Liberal parties and it is believed that at least 200,000 people lost their lives in this period.

In more modern times this internal conflict has continued and since the 1960s armed conflict in Colombia is thought to has taken the lives of almost 300,000 people. The government, aided by right-wing paramilitaries, have fought against left-wing guerrillas, such as The Revolutionary Armed Forces of Colombia (FARC) and the National Liberation Army. These militants were frequently supported by the likes of Cuba, Soviet Union and neighbouring socialist countries. Among these warring factions, drug cartels have often changed allegiances when it suits. Escobar had close links with the guerrillas and collaborated with them to attack the government, until the guerrillas started smuggling cocaine. Colombia's four-way internal war still rages on today, although efforts have been made for ceasefires. Throughout this conflict, the country's poor have remained neglected and still have low standards of living.

"He would distribute food around the poor areas of Medellín and provide money to build houses, schools and hospitals"

Medellín Cartel was moving 35 kilograms (77 pounds) of cocaine out of Colombia each month. As the 1970s gave way to the 1980s, the price of cocaine in the US fell and the expanding customer base for benzoylmethylecgonine – the molecular formula for the addictive white powder – increased demand. Escobar stepped up the supply. To do so he created a highly sophisticated network of corrupt politicians, police officers and other officials that allowed him to import large quantities of coca leaves from Bolivia and Peru, turn it into cocaine in Colombia and Venezuela, smuggle it into Central America or the Caribbean and then into the United States. At all levels of Colombian society, money from Escobar's operations lined the pockets of officials, whether they liked it or not. Within a decade of setting out, Escobar's small-scale operation had turned into an international enterprise that made up to $60 million every single day.

The Medellín Cartel had two submarines, which were used to smuggle cocaine into the US

Escobar become so powerful in part by realising early in his criminal career that there were two ways to earn power: admiration and fear. In the cutthroat world of drug smuggling, it is survival of the fittest. Aspiring traffickers were killed. Those in his organisation who stepped out of line were beaten and tortured and the drug kingpin cultivated an image of a man all too willing to use violence. It is said that Escobar was responsible for between 4,000 and 5,000 deaths. Still, he rarely got his own hands dirty – he paid assassins to do that. He once callously stated: "Sometimes I am God, if I say a man dies, he dies that same day." His rise to power also cost the lives of three presidential candidates, 30 judges, dozens of journalists and 400 policemen. Regardless of your position in society, if you made an enemy of Escobar, you'd end up looking down the barrel of a gun.

Yet Escobar was smart enough to know fear was not enough – many gangsters were feared, but had met an early death all the same. He also had to win the hearts of the Colombian people, which he tried to do through charity. In 1989, *Forbes Magazine* estimated that he was the seventh-richest man in the world with a net worth of almost $3 billion. He bought multi-million dollar apartments, luxury cars and other trappings of wealth, but also saw that his money was directed into the neighbourhoods where he came from. He would distribute food around the poor areas of Medellín and provide money to build houses, schools, hospitals, churches, parks and football teams. His 'generosity' bought him loyalty from those who had nothing. In an impoverished Colombia it is not hard to see why Escobar was seen by some as a noble bandit. Throughout the 20th century it was a country of great inequality of wealth, corruption and political violence. Rich politicians used the poor to do their fighting but never shared the profits. Escobar was in direct conflict with the establishment; many ordinary Colombians chose to overlook his violent ruthlessness and saw 'Don Pablo' as one of their own who had 'made it.'

However, critics of Escobar say his philanthropy was merely sensible business, keeping the poor on his side for personal and business security. To propagate his image as a 'friend of the people', he even started his own newspaper, which featured sympathetic articles about Escobar and scathing attacks on those trying to bring him to justice. Furthermore, his murderous connections also accounted for about 20 deaths of ordinary Colombians per day. While his hero-of-the-people

Defining moment
The drug business
1975

Escobar makes his first trip to Bolivia and returns with $30 worth of coca paste. He refines it in a small house in Medellín and smuggles his first load of cocaine into Panama, Chile, in a plane he flies himself. The drugs are hidden in the aircraft in old plane tires. After this successful first run, he returns to Bolivia to purchase higher quantities of coca paste and refines more cocaine in Colombia.

Timeline

1949

- **Escobar is born**
  Pablo Escobar is born to farmer Dari and elementary school teacher Hermilda. He is the third of nine children and the family is poor, with daily necessities hard to come by. Like many in Colombia, life is difficult. When he is 12 years old he is sent to live in Medellín with his extended family.
  1 December 1949

- **The Medellín Cartel**
  After killing Fabio Restrepo, a rival drug lord, Escobar informs Restrepo's men that they are now working for him. He then forms what will become known as the Medellín Cartel.
  1975

- **Marriage material**
  Escobar marries Maria Victoria, who is only 15 years old. Together they have two children.
  12 March 1976

- **The politician**
  Escobar becomes an alternate member of the Colombian Chamber of Representatives for the Colombian Liberal Party. He campaigns against extradition laws to the United States, for fairly obvious reasons.
  1982

- **Money and power**
  Escobar is at the peak of his powers during the mid-1980s. A staggering 11 tons of cocaine are transported to the USA per flight by his dominant criminal organisation.
  1985

The drug lord's excesses included his own private zoo - here officials remove some of his hippos after Escobar's death

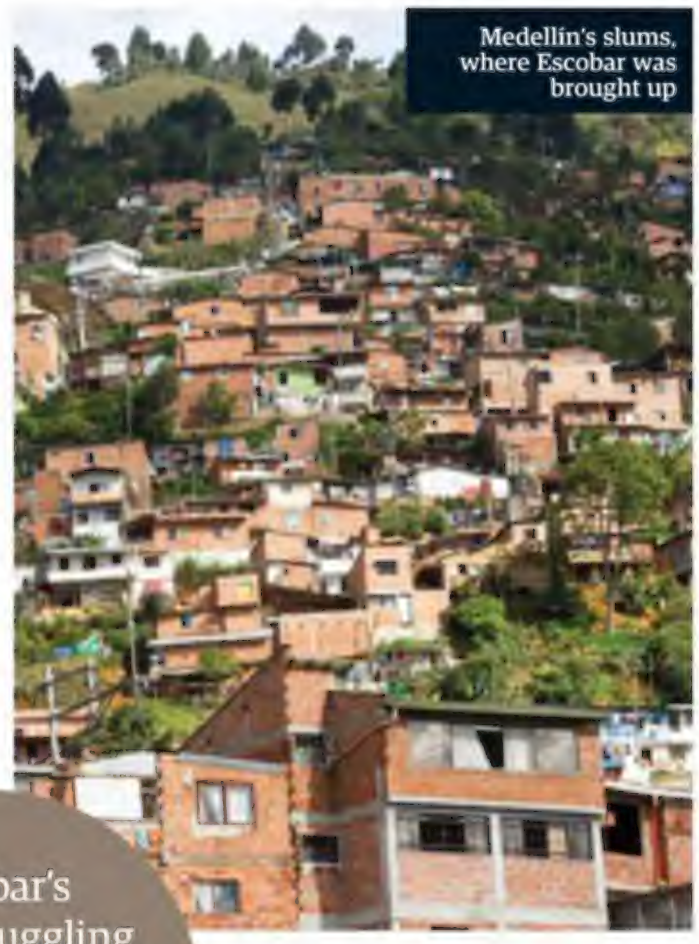
Medellín's slums, where Escobar was brought up

image held sway for some, it certainly didn't convince everyone.

An estimated 500,000 people were directly or indirectly dependent in his underground economy, but not all went freely into his employ. The families of peasant workers were threatened with death if they did not produce the expected quantities of cocaine and few could choose to leave their job. Politicians and police officers who refused to accept Escobar's bribes faced possible assassination. In 1989, presidential candidate Luis Carlos Galán declared himself an enemy of drug cartels. On Escobar's orders Galán was shot dead and he tried to kill his successor, Cesar Gaviria. A bomb exploded on an aeroplane killing 107 people, but Gaviria, the target, was not on board. The following year, Gaviria became president and under his control Escobar's brutal reign of terror would come to an end.

By the early-1990s, Escobar had become internationally renowned but also internationally wanted. The US had been attempting to extradite him for many years, something Escobar was fearful of. He tried - and failed - to change Colombia's extradition laws; first with a short-lived career in politics and then with an offer to pay off Colombia's foreign debt - a staggering $13 billion. In 1991 he finally made an agreement with the government: he would serve a five-year prison sentence with the promise he wouldn't be extradited. The government agreed.

Escobar's drug-smuggling operation was said to have employed almost 500,000 people

They also agreed that Escobar could build his own prison - one with Jacuzzis, football pitches and bars - choose his own guards, be the only prisoner there and be able to continue business by telephone.

The government eventually said enough was enough when it emerged that Escobar was using the prison to torture disloyal associates, and decided to transfer him to a regular prison. Fearing extradition, he fled and went into hiding.

In response the government created Search Bloc, a 2,000-strong special operations unit within the police force, whose sole purpose was to find Escobar. Trained in the United States, this unit searched almost 15,000 houses before finding his hideout in a Medellín 'barrio' called Olivos on 2 December 1993. Fleeing across rooftops, Escobar was shot three times, in the leg, torso and head. According to his brothers, the bullet that killed Escobar came from his own gun. This is possible, as Escobar once said in an interview, "I'd rather be in a grave in Colombia than in prison in the United States." The next day the headline of *La Prensa*, Colombia's national newspaper, read: 'Immortal joy, Colombia between relief and delirium.' The brutal drug lord of Colombia was no more.

Defining moment

Seventh-richest man in the world

10 July 1989

Forbes Magazine lists Escobar as the seventh-richest man in the world with a net worth of almost $3 billion. His wealth is so fantastically big, it is said that each year, rats eat almost ten per cent of his hidden cash. Furthermore, Escobar's brother Robert estimates that the cartel spend almost $2,500 each month just on rubber bands to hold the money together. Escobar rubs shoulders with some of South America's most influential and powerful figures, such as the Cuban leader Fidel Castro.

Presidential candidate assassination
On Escobar's orders, presidential candidate Luis Carlos Galán is assassinated while delivering a campaign speech. Galán had openly declared himself an enemy of drug cartels and corruption in Colombia.
18 August 1989

Prison break
Escobar, fearing extradition to the USA, flees the prison he built for himself and goes into hiding. A special unit of the Colombian police force, Search Bloc, is set up with the sole purpose of finding him.
22 July 1992

1993

Defining moment

Escobar is killed

2 December 1993

Escobar is found by the Search Bloc in a Medellín 'barrio' and chased across rooftops. Three gunshot wounds bring down the 'King of Cocaine.' After his death, his wife and two children relocate to Argentina where they continue to live under new identities. His son, Sebastián Marroquín, later stars in a documentary called *Sins Of My Father*, in which he meets with the children of those Escobar had killed, to ask for forgiveness.

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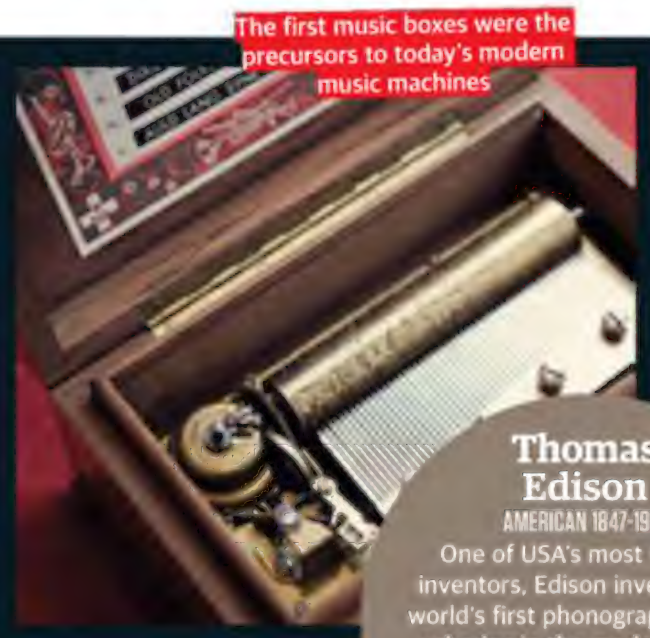
MUSIC PLAYERS

Despite the world's rich and ancient musical heritage, the age of recorded sound is relatively modern, springing into life only in the 19th century. Follow the evolution of music players from then until now

MUSIC BOX 1815

First invented in the late-18th century in Switzerland, they began as small novelties capable of playing short, basic tracks, but by 1815 the first music-box factory had opened. The musical systems these produced were far larger and worked by rotating a notched brass cylinder within a series of steel teeth. As the teeth passed over the notches, musical notes were struck, with an entire track played out by the termination of the cylinder's rotation. Many of these music boxes were designed to allow for different cylinders and thus different tracks to be played.



The first music boxes were the precursors to today's modern music machines

Thomas Edison
AMERICAN 1847-1931
One of USA's most famous inventors, Edison invented the world's first phonograph in 1877, ushering in the modern age of recorded sound. Edison continued to develop his original design and his music player was only superseded in the late-1920s.

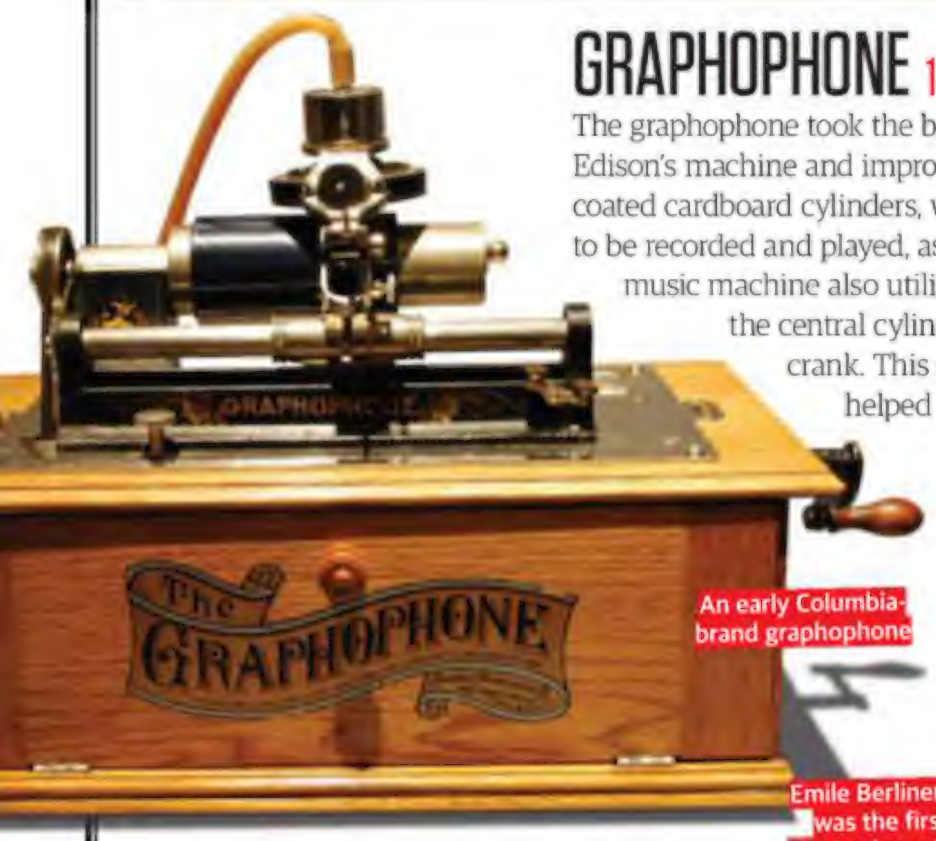
PHONOGRAPH 1877

The phonograph, invented by Thomas Edison, was arguably the first true modern music player. The system reproduced sounds by vibrating a stylus that followed a preset groove on a rotating cylinder. Within the groove were a series of undulations, that when passed over by the stylus, could be translated into musical notes. What really set Edison's system apart was its ability to actually record sound and not just play it back.

Edison's phonograph recorded sound by piercing a tinfoil sheath wrapped around a metal cylinder

GRAPHOPHONE 1887

The graphophone took the basic principles of Edison's machine and improved them by using wax-coated cardboard cylinders, which allowed for longer tracks to be recorded and played, as well as clearer playback sound quality. The music machine also utilised electric motors in later iterations to rotate the central cylinder, rather than relying on a manual hand crank. This semi-automation of the playback process helped bring the system to the public.



An early Columbia-brand graphophone

RADIO 1912

Guglielmo Marconi began experimenting with radio waves in 1894. 18 years later he had not only won the Nobel Prize in Physics, but he had also opened the world's first purpose-built radio factory, with huge commercial demand for his audio transmitters and receivers. The radio would go on to become one of the most popular music players of the early-20th century and radio stations would transform the way people listened to music forever.

The existence of radio waves and the feasibility of radio transmission was predicted by James Clark Maxwell in the 1860s

GRAMOPHONE 1903

In 1889, inventor Emile Berliner created the first lateral-cut record discs, as well as his own system to play them. These discs, while at first offering poor sound quality and measuring a mere five inches (13 centimetres) in diameter, were quickly improved on, with ten-inch (25-centimetre) and then 12-inch (30-centimetre) variants following. The latter variety could record and play back over four minutes of sound, a fact that helped to usher in the gramophone era, a period of over 50 years.

Emile Berliner's gramophone was the first commercial music player to use discs as a storage medium

REEL TO REEL 1924

The original tape-based recording machines, these allowed speech and then music to be recorded without the time limits (about 30 minutes) of phonographic discs. The original systems used metal wire tape as the recording medium, as this material granted longer recording times compared to discs, but delivered poor playback and made editing difficult, with the wire tape having to be cut for changes to be made. The invention of cellulose acetate plastic tape mitigated those issues and ushered in the era of widespread editable audio, with cuts made by splicing the system's tape together with glue or adhesive tape.

The cassette player was used by millions to create mixtapes of their favourite songs

COMPACT CASSETTE PLAYER 1963

The cassette, which was introduced at the Berlin Radio Show in 1963 by Phillips, was based on the existing magnetic tape recording format that had been utilised in reel-to-reel systems. However, due to its small-scale size as well as the format being licensed free of charge, it was far more commercially viable. By 1968 over 2.4 million tape recorders had been sold.

> "The phonograph was arguably the first true modern music player"

Digital music has meant systems like this aren't used as much, but some still believe they produce a 'warmer' sound

Peter Goldmark
HUNGARIAN 1906-1977
The father of the LP, Goldmark was an influential engineer at Columbia Records. His work on developing the long-playing microgroove 33-⅓ phonograph disc helped popularise the format worldwide.

CD PLAYER 1982

The world's first commercial CD player was Sony's CDP-101, going on sale in Japan on 1 October 1982. The system helped to introduce the format of the compact disc to the public. Capable of holding 80 minutes of audio, the CD became the dominant music-storage format worldwide, with its high storage capacity (737 megabytes), cheap cost and recordability seeing their sales rocket.

30 billion CDs were sold in 2004, a peak year for the storage medium

Tony Fadell
AMERICAN 1969-PRESENT
Considered a key designer behind the hugely popular music player, Fadell was responsible for much of its success. Originally brought into Apple to plan its audio product strategy. Fadell helped with the initial concept and design of the iPod.

MINIDISC 1992

The MiniDisc player was a magneto-optical disc-based system capable of storing up to 80 minutes of digitised audio. The format and first player, the MZ1, was introduced by Sony in 1992 and at first sold well, with the MiniDisc's ability to prevent track skippage and to record audio greatly helping sales. However, the introduction of recordable CDs and solid-state flash memory meant that within four years, mainstream MiniDisc sales collapsed. Today, the MiniDisc is considered an obsolete format.

The Sony MiniDisc was one of the shortest-lived music players of the last 100 years

IPOD 2001

Although it was released in 2001 and is now an international sensation, it wasn't until several years after its release that the music player really took off. The first iPod had a 5 GB hard drive and on its release Steve Jobs boasted that it could put "1,000 songs in your pocket." The music machine works with computer software, through which its user can buy and store digital music and podcasts. Over 400 million have been sold.

iPod batteries can last between 14 and 28 days if they are not used

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What if...

Charles I had won the English Civil War?

ENGLAND, 1642-1649

Written by Jack Griffiths

DR CHRISTOPHER LANGLEY

An historian of the social and religious aspects of Early Modern Britain and Ireland, Dr Christopher Langley is a lecturer at the University of York and Newman University. He is in the process of publishing the book *Worship, Civil War And Community, 1638-1660*, which will focus on warfare and religion in the Civil War era.

PROFESSOR JOHN MORRILL

John Morrill FBA is Life Fellow of Selwyn College Cambridge and Emeritus Professor of British and Irish History. He is a prolific author of more than 120 books and essays, mainly about the civil wars of the 17th century and about the aftermath of the Reformation.

What would have happened if Charles I had won the Civil War?

Christopher Langley: A serious policy of purging national and local councils of those who were clearly disaffected with the royalist cause. Those who had changed sides would be tolerated in exchange for an oath declaring their allegiance - similar to the oaths administered by his son [Charles II] after 1660. Charles would have had to change his religious policy. A broad-based system would continue with bishops at its head, but perhaps local disciplinary structures may have been tweaked to allow local management. Extremists on either side (Presbyterian, Catholic or radical) would have been excluded.

John Morrill: It depends on whether it was won by a knock-out blow, such as complete victory at Edgehill or Turnham Green and a royal occupation of London, or as a result of a 'winning draw' - in which case, a negotiated settlement in which Charles agreed to honour the concessions he had made in 1640 and 1641 but not the new demands of 1642 and later.

Which battles would Charles have had to win to regain control in the war?

Langley: This is a difficult question as much depended upon political machinations after battles. I am inclined to mention that a decisive victory at Edgehill may have allowed for a more dramatic march toward the capital - the loss of any real royalist presence in the southeast severely hindered the war effort. A real royalist victory at the first Battle of Edgehill may have inclined some in Parliament to soften their stance and provide Charles with an important bargaining chip. Alternatively, Marston Moor in 1644 was critical as it had serious consequences for any royalist desire to connect supporters in Scotland, Ireland and the north of England.

What would have happened to Oliver Cromwell, the Roundhead Army and the Parliamentary supporters?

Langley: With the possibility of routing the New Model Army [the force raised by the Parliamentarians], the royalist negotiating position would have been much stronger. While Charles may have wanted the New Model disbanding, he would have had to deal with the arrears in pay accrued since its formation. If Charles would have carried the day early on in the conflict, Cromwell may have been imprisoned, but his position would not have been so prominent. After Marston Moor in 1644, Cromwell's star really rose. Cromwell's destiny would have been dependent on his own response. However, if he continued to oppose Charles and refused to accept his authority, he would have been executed for treason.

Would Charles now have complete power over the English Parliament?

Morrill: In the unlikely event of Charles winning an all-out victory, he would have attempted to resume Personal Rule [the period from 1629 to 1640 when he didn't call Parliament]. With no foreign threat and the economy bouncing back from the wartime recession, he could probably have managed on the funds available but being Charles there would likely have been provocations. The genie of Puritanism was out of the bottle and it is almost impossible to see him behaving as sensibly as his son did in managing that problem.

Would England have regressed as a country without having a parliament?

Langley: Following the 1641 Triennial Act [requiring that Parliament meet for at least a 50-day session once every three years], Parliament would certainly have been recalled.

> “If Cromwell continued to oppose Charles and refused to accept his authority, he would have been executed for treason”

Oliver Cromwell, the leader of the Parliamentary forces, would have been executed if he hadn't accepted the king's rule

The question of 'when' is more tricky. I am inclined toward thinking that Charles would have recalled a purged Parliament and pressured it to pass acts against treasonable figures. Of course, Charles would have had to deal with the 'ordinances' (rather than full-blown 'acts') that Parliament had passed in his absence. As many of these were associated with cash generation, one is inclined to feel that Charles would have kept some of them and rubber-stamped them as full acts. Following the fears of social unrest, the return to stability may have been greeted happily in some quarters. Parliament had already obtained concessions from Charles, so England would not have emerged from a Royalist victory as an absolutist state. Despite the 11 years when Charles ruled without a parliament, he had no designs on serious reform along the lines we see by 'absolutist' French kings later in the century.

"We might have got the 1921 partition [of Ireland] into Catholic South and Protestant North 300 years earlier"

What would have been the religious response?
Langley: Charles was committed to a broad Church of England with himself at the head, buttressed by a series of archbishops. In the event of any victory, Charles could not simply turn the clock back. If a decisive victory occurred before 1646 (when the Westminster Assembly abolished key parts of the Anglican Church) then less work would have had to be done. Pressure to reform the Church would have continued to exist and some Presbyterians at the Westminster Assembly were already pushing for a middle way.
Morrill: Charles believed he would answer to God for his actions as head of the Church. He also believed the Church

Oliver Cromwell and Roundhead troops at the Battle of Marston Moor, which was a decisive victory for the New Model Army

How would it be different?

Real timeline

1628

Petition of Right
After numerous disagreements over tax, Parliament forces Charles I to sign a petition reducing non-parliamentary taxation and imprisonments without trial.
1628

War with France ends
Following a series of defeats, England ends its involvement with the Thirty Years' War and makes peace with France and Spain. The end of English involvement means Charles has less need to raise taxes, and thus less need of Parliament.
1629

Personal rule
After further disagreements in government sessions, Charles dissolves Parliament and rules personally for 11 years without calling Parliament even once.
1629

Grand Remonstrance
As rebellions are quashed in Ireland, Parliament presents to Charles the Grand Remonstrance, a list of grievances. Parliament looks to take full control over the English Army.
October 1641

Attempted arrests
Charles, accompanied by 400 soldiers, attempts to arrest five members of the House of Commons on charges of treason. This attempt fails, as they are not present and the speaker of the house pledges his loyalty to Parliament.
October 1641

The Civil War begins
Civil war now seems inevitable and Charles flees to Nottingham from London. Both forces prepare for war and cities declare which side they are supporting.
August 1642

Real timeline

Alternate timeline

of England was both Catholic and Reformed - that it was in direct descent from the apostolic church but had thrown off the corruptions introduced in worship and practice by bishops and patriarchs of Rome who had also claimed authority over all other patriarchs.

How would Ireland and Scotland have fared under Charles' continued kingship?

Langley: Charles governed Scotland like his father: in absentia. I cannot see Charles becoming any more 'hands on' with Scotland if he had been victorious in England. The idea of one religious policy for England, Scotland and Ireland may have slowed down, but it was something to which Charles was committed. An English invasion of Scotland would have been avoided as it would have opened divisions in the English - many English puritans still saw Scotland's Presbyterians as a beacon of hope and may have sided with them.

As for Ireland, the situation was different. Charles had significant pockets of support but more decisive action would have been needed. Victory in England would have allowed Charles to either change tactic or break off negotiations with the Catholic Confederation altogether. While Dublin and the Pale remained largely loyal, it is difficult to envisage Charles quelling Irish resistance without a land invasion.

Morrill: Charles could have left Scotland well alone. He had cut a deal with them in 1641 which we would nowadays call devolution max - self-determination and self-governance with him as puppet king. He could have tried to divide and rule, but it would have been low on his list of priorities as he tried to rebuild in England. Ireland as early as late-1642 was 85 per cent under Irish-Catholic control and he might well have cut a deal with the Irish Confederation - a kind of devolution max - so as not to have to pour money into reconquering Ireland. We might even have got the 1921 partition into Catholic South and Protestant North 300 years earlier!

What would have England been like in 1651 after a royalist victory?

Langley: Some historians have described the Cromwellian 1650s as a 'police state.' Charles may have feared similar dissent from disaffected individuals and chosen to do something about the unregulated printed presses in London and tried to control their output. The presence of many troops created problems for the Cromwellian regime - I see no reason why an army would not have caused Charles a headache, too. In Scotland, demobilised troops would have gone back to fight in the final stages of the Thirty Years' War.

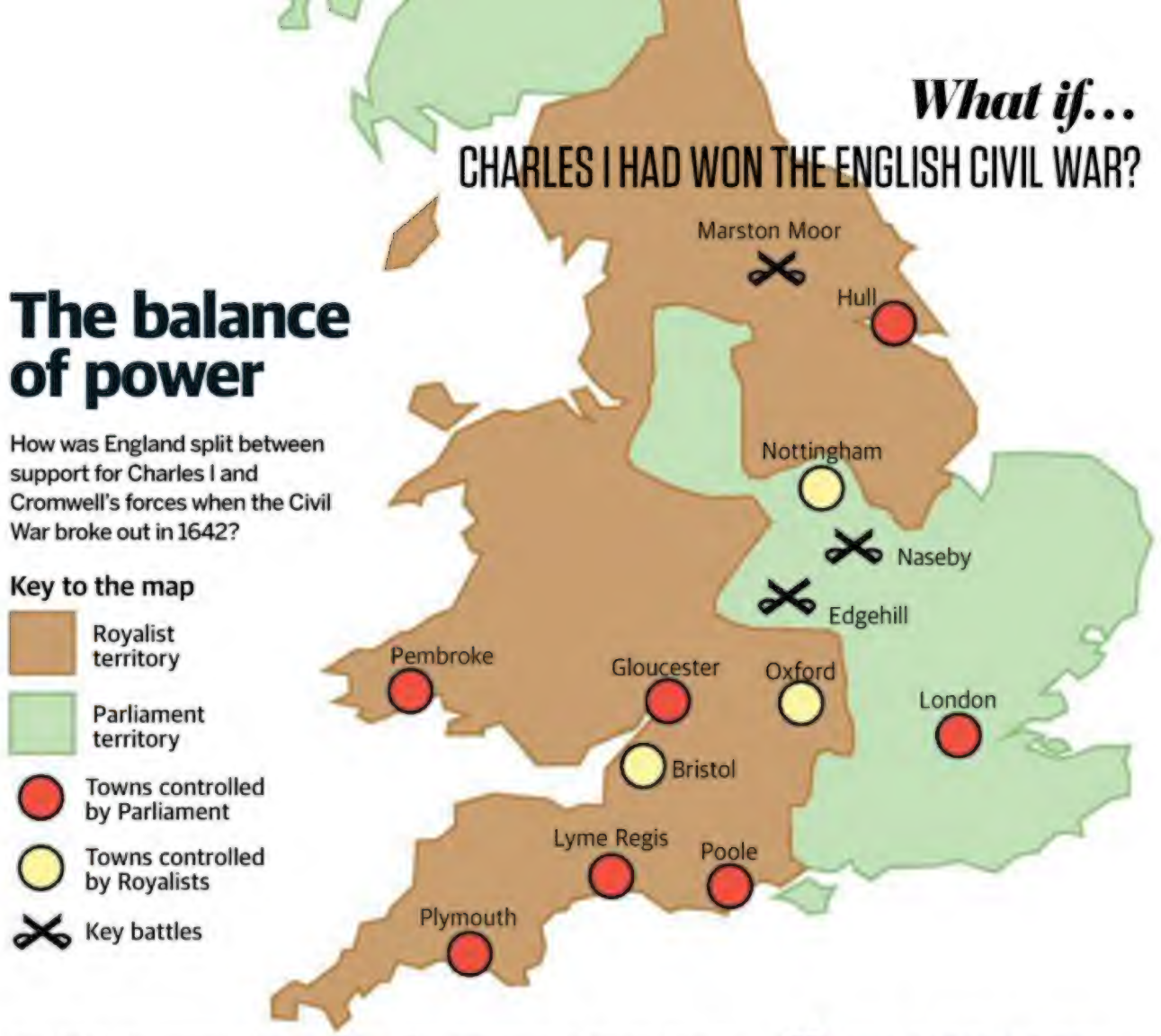
The religious experiments that took place in the 1650s under Cromwell would have been totally different under Charles. Charles would have attempted to settle England back to an Anglican middle-way - and there is plenty of evidence to suggest that moderate Anglicans dotted throughout 1650s England would have welcomed it. Religious dissent would have gone underground - like before the war - but would have perhaps led to problems in subsequent decades for Stuart rule.

How would it have affected the likelihood of future revolutions in other nations?

Morrill: The inspiration of the English Revolution for later revolutions is precisely that; the revolution of 1649 and the extraordinary outpouring of radical writing in the years 1646-59 - Milton, Harrington, Algernon Sidney, Cromwell. If there was no 1649 revolution, none of those might have happened.

The balance of power

How was England split between support for Charles I and Cromwell's forces when the Civil War broke out in 1642?



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Unsuccessful siege of Hull
Royalist forces unsuccessfully besiege Kingston Upon Hull and fail to gain access to the city's armouries.
July 1642

Battle of Marston Moor
The royalists gain several small victories until Parliamentarian cavalry rout Charles' men at the Battle of Marston Moor in North Yorkshire.
July 1644

Successful siege of Hull
By bribing the city's governor, Kingston-Upon-Hull opens its gates to royalist forces and they fully equip their arsenal for the march south.
July 1642

The march south
After victory at Edgehill, London is besieged by Charles. Cromwell's forces fall and the capital and Parliament come back under Caroline rule.
October 1642

The New Model Army
A speech by Cromwell to Parliament overrides the military high command and gives all power to this new military force.
February 1645

Parliament disbanded
With no organised force to oppose him, Charles strips Parliament of its power and purges any of his political rivals. Oliver Cromwell refuses to accept his king's victory and is executed.
January 1643

Loyal to the king
Cromwell's New Model Army is dismantled and a new royal army is created, loyal and answering only to a victorious King Charles.
1644

Church control
Charles tightens his grip on religious affairs by becoming the self-proclaimed head of the Church of England, with personally hand-picked bishops in support.
1645

War in Europe
Shying away from an invasion of Scotland or Ireland, Charles' head turns to Europe where he attempts to restart the Thirty Years' War.
1647

Battle of Naseby
A decisive victory for the Parliamentarians sees Charles flee to Scotland. He is eventually sent back to London to face his enemy and the charges they bring against him.
June 1645

Charles executed
Despite many Parliamentarians not wanting to put the king on trial, he is and is found guilty of a "traitorously and maliciously levied war against the present Parliament and the people therein represented." Charles does not recognise the legality of the trial and refuses to defend himself. The king is beheaded.
30 January 1649

Revolts
Uprisings are common throughout the country but with no organised revolution on the horizon, England remains firmly under monarchical rule once more.
1649

© Alamy, Sarah Biddle

Eye Witness
THE CHERNOBYL DISASTER

A worker being readied to run down one of the corridors toward the exploded reactor to lay water pipes

Eye Witness

THE CHERNOBYL DISASTER, UKRAINE, 26 APRIL 1986

Written by Jamie Frier

ANATOLI GUBARIEV

Anatoli Gubariev was an engineer in one of the fire departments sent to put out the fires raging in the Chernobyl nuclear power plant. He was born in 1960, making him just 26 at the time of the disaster. He had served in the Soviet Army for two years before getting a job at a Kharkov machine-tool factory where he was earning a qualification in metal cutting from Kharkov Polytechnic.

> “It was hard work and we were risking our lives, but we were all just doing a job”

On 26 April 1986, a reactor at one of the world's largest nuclear power plants exploded, unleashing thousands of tons of nuclear waste into the air. The fire in Reactor Four in Chernobyl power plant burned for nine days following the accident. Very few, if any, were told the true scale of the task that was ahead of them. One such man was Anatoli Gubariev, a 26-year-old plant engineer in the fire battalion.

"It was 4 May and I had just returned home. Opening the door I saw a man holding a folder. He asked me 'You are Gubariev?' I said I was and he said 'Receive and sign it!' It said 'Writ Command. In an hour you must show up at this meeting point.' It was in the Palace of Pioneers Ordzhonikidze district of Kharkiv", says Gubariev.

Firefighters, helicopter pilots and medical staff came from all over the country to help with the rescue effort. What angered people later was how little information was made available by the Soviet government (Ukraine was part of the Soviet Union until 1989) and their attempts to cover up the truth.

"I had no idea about the scale of the disaster. I had read a short notice on the third page of *Komsomolskaya Pravda* [A daily Soviet tabloid] on 29 April and that was it. I was later able to learn more about it from the news of forbidden Western sources such as *Voice of America* and *Free Europe*, which sometimes broke through." Gubariev recalls that as they assembled to go to the plant to help with the containment operation, "There were about ten buses at the meeting point. Someone tried to make a joke but it didn't get much support. It was at this point that we realised this was not a game and something very serious was going on.

"Over the next five days they created teams capable of combating fire. Everyone became accustomed to the fact we had to go to Chernobyl. We plunged into new buses and drove off. The column seemed to be endless. We were headed by a police escort car, then our coaches and finally the special firefighting trucks. Two things stick out in my memory from that journey. The first was wells covered in plastic wrapping and the second was a young family of husband, wife and a two-year-old daughter trying to escape the horror of the contaminated area on an old moped."

The two closest towns to the nuclear power plant were Pripyat and Chernobyl, which had about 68,000 residents in total. It wasn't until 36 hours after the accident that the authorities begin evacuating people. In total, 130,000 were moved as the evacuation zone increased to 30 kilometres (18 miles). Teams worked around the clock to secure the area, including helicopter pilots who were spraying a mixture of sand, lead and boron onto the reactor.

"Everyone who was already at Chernobyl were wearing strange clothes," explains Gubariev. "Some were wearing white jackets and trousers, some in blue. People were reacting differently to what was happening. Some with caution, some with undisguised dismay and some with bravado. I could now see the ruined concrete structure of Reactor Four and the faint steam cloud that was rising above it. That steam cloud stayed

Timeline of events

CST

1.00am 25 April — The experiment
Plant engineers attempt to see what would happen if the plant is forced to run on low power.

1.30am — Engineers lower control rods in order to simulate loss of power in the plant.

1.05pm — Power drops
The power in the plant drops to 50 per cent and a turbine is switched off.

12.00am 26 April — Power drops too quickly and the rods are raised again.

12.30am — Engineers at the plant carry on with the experiment, satisfied that it is safe.

1.00am — Power is still too low so rods are raised to allow more nuclear fission to take place.

1.23am — Power surge
A huge surge of power occurs due to the raised control rods which causes overheating.

1.23am — Emergency shutdown
The emergency shutdown signal is activated but the lowering rods push the cooling water out.

1.24am — Reactor explodes
Two huge nuclear explosions tear through the power plant, causing the roof to fly off.

1.30am — Air rushes into the now-open reactor, causing all the carbon monoxide gas to set alight.

1.35am — Firefighters reach the site
Fire crews arrive at the scene and battle with fires breaking out where the turbines are located.

2.15am — In a crisis meeting the minister for home affairs demands a roadblock be set up.

3.00am — President Mikhail Gorbachev is informed of the situation.

4.00am — Moscow takes charge
Moscow begin to issue directives, not realising the reactor has exploded and is leaking radiation.

6.35am — Further fire crews arrive to battle the flames at Reactor Four, which is still burning.

7.00am 27 April — Radiation test
General Vladimir Pikalov bursts through the roadblock and measures the radiation leakages.

10.00am — Helicopters arrive
Helicopters drop sand and lead onto the roof in an attempt to quell the flames in the reactor.

A team of decontamination workers head for the site and the heart of the disaster area

above the reactor until 20 May. We drove up to the reactor and stopped about 100 metres (330 feet) away. From there, we could get to the site using an infantry fighting vehicle, or we would have to run through the administrative building."

By this point in proceedings Moscow was well aware of the scale of the tragedy and how bad the nuclear fallout really was. However, they continued to pour workers into the area in an attempt to bringing the disaster to an end as soon as possible, regardless of the health risks to those tasked with bringing normality back to the plant. Keen not to lose face to the western world during the Cold War, there was a heavy blanket of secrecy over the whole event.

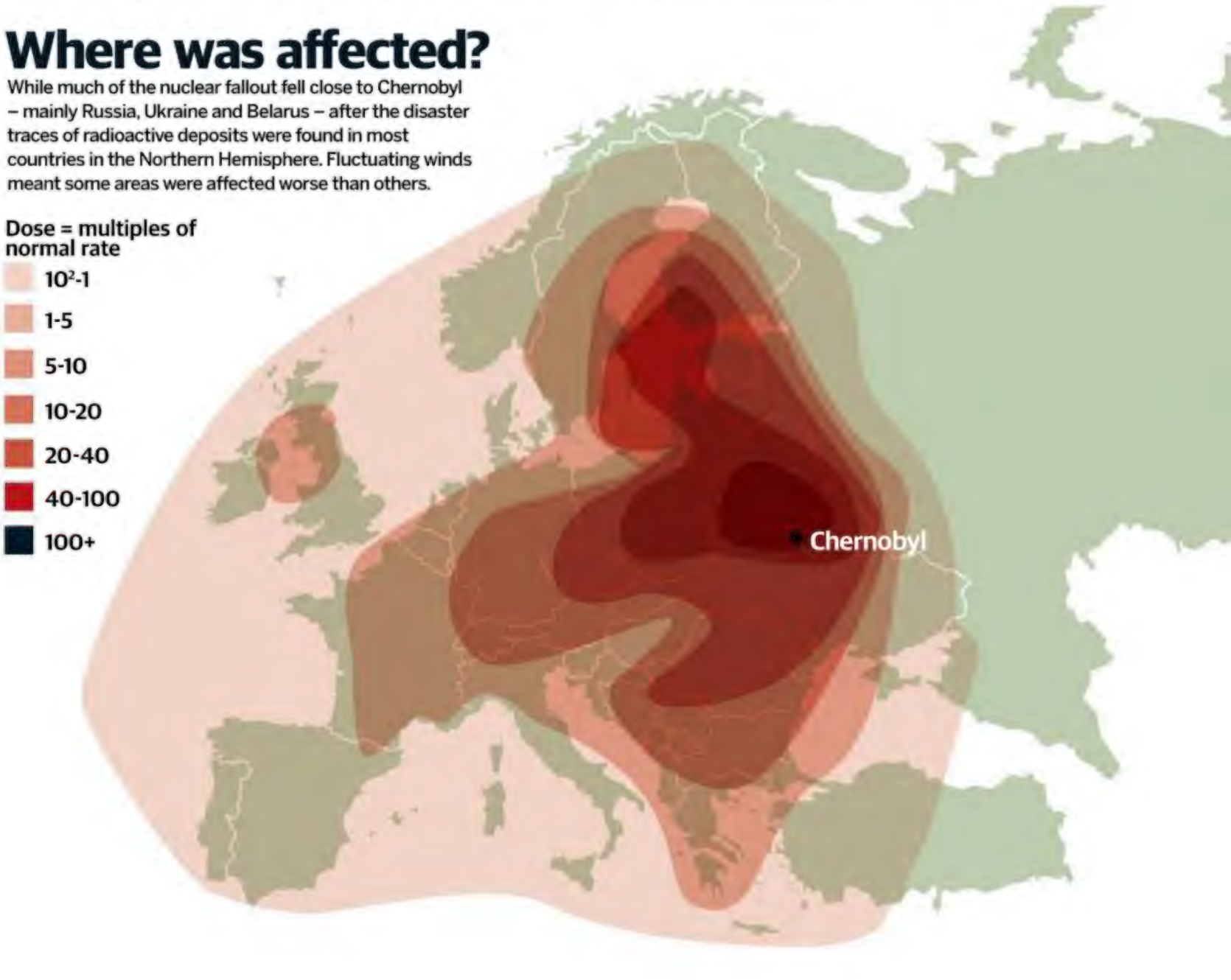
"Our battalion's duty was to carry out fire protection within a 30-kilometre (18-mile) radius and in the power plant. We had to extinguish fires in this territory. Around 3:15 on 19 May we heard the call 'Battalion! Alert! Ready in one minute!' After a few minutes I was driving in a column of fire engines from our site to the Chernobyl power plant," Gubariev says. "There was a rectangular container filled with iodine that you had to dip your boots into and a young soldier with a gun sitting at a checkpoint, obviously scared and not understanding what was happening.

"We started to carry out our task. The first people went and after 30 minutes they took a few more. Then it was quiet and we spent over an hour waiting. Then we were told to take two sleeves and run." This command meant that Gubariev and the rest of his team had to take two fire sleeves and run with them in the direction of the heart of the fire. "I rushed to the car, grabbed them and ran. We were already dressed up in chemical protection suits, which were rubber overalls that didn't let any air or moisture in, and face respirator masks," he recalls. "The major, sergeant and dosimetrist (doctor specialising in radiation) told us that where we were, the radiation level was two X-rays an hour. Just outside the door it was 60 X-rays an hour. The further in, the more radiation there was. We were to keep our respirators on. It was very difficult to do that in such conditions as sweat was running all over our faces and we felt the lack of air. We had to lay the sleeves along the corridor so water could flow through it. To do this we had to find the ends of the previously laid sleeves, connect ours and run back. As people came back through the door, they fell out totally wet and exhausted."

It's hardly surprising that Gubariev and his troops were sweating. Temperatures inside the reactor's core had reached an incredible 2,000 degrees Celsius (3,632

Where was affected?

While much of the nuclear fallout fell close to Chernobyl – mainly Russia, Ukraine and Belarus – after the disaster traces of radioactive deposits were found in most countries in the Northern Hemisphere. Fluctuating winds meant some areas were affected worse than others.



The sarcophagus around Reactor Four under construction in October 1986, almost ready for the flooding of concrete

Teams worked tirelessly to decontaminate the area around Chernobyl, spraying everything to remove nuclear waste

"Where we were, the radiation level was two x-rays an hour. Just outside the door it was 60 X-rays an hour"

degrees Fahrenheit), which is over two times as hot as lava. The graphite moderator, which is used to slow down electrons so they can release more fission, had exploded violently and was not only continuing to burn fiercely in the reactor, but had also flown all over the plant. This was because the reactor had malfunctioned and was releasing nuclear waste into the air.

"This was the point of no return. Water squelched under my foot and the corridor seemed infinitely long. From time to time I came across burning bulbs, which were landmarks," he says. "Finally, I reached the stairs. On I ran, even faster. I felt caught in a long corridor with almost no light and, as we thought, no end. Finally, I noticed a beam of light from the lantern standing on the floor. We joined up the sleeves and moved the lantern on, trying to illuminate the space in front, but we couldn't see a thing in the smoky darkness. The only noise was the rushing of water. When I was coming back, it seemed that the corridor became three times as long and the arms of the protective suit seemed to be as heavy as tons of stone. How I got out of there I do not remember but the main thing was, we were safe."

Once out, the workers were instantly checked by the dosimetrists to see how much radiation they had absorbed. Gubariev had only absorbed seven X-rays of radiation, but his fellow worker, Nick, had received a dose of 20 X-rays. To put this in perspective, the average amount of radiation a person would generally expect to receive in an entire year is just 3.1 X-rays. They increase the risk of cancer by releasing electrons from atoms inside your body, which damage DNA. Many workers at Chernobyl received huge amounts of this radiation, leading to health problems later in life.

"Cleaning workers on the power plant showed the best human qualities such as selflessness, heroism, self-sacrifice, sense of duty and mutual assistance. There was nothing special or heroic about what we had done. It was hard work and we were risking our lives, but we were all just doing a job."

Gubariev might have only thought he was 'just doing a job' but the Soviets disagreed, honouring him with the highest peace-time award possible, a first-class government medal for 'Distinction in Military Service.' He was there for 35 days in total, working shifts ranging from two to 14 hours. It was not until afterward that he learned exactly how much danger he and the rest of the people working there were in.

"I will never forget the young family that was trying to escape on their old moped, to escape the horrors of Chernobyl", he recalls. "A woman with a baby wrapped in wax cloth. Her husband in his shirt sleeves. On the back of the bike, a plastic bag with all their belongings, all they managed to take with them to enter their new life." More than 30 people died in the weeks following the explosion and hundreds of thousands more have suffered with radiation-related illnesses such as thyroid cancer, but if it were not for those brave souls like Anatoli Gubariev who risked their lives to battle the terrifying inferno of Chernobyl, it could have been much worse.

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Origins and aftermath

This incident came about due to poor decision making by the plant's engineers when it came to the safety of the experiment they were undertaking. As it was the height of the Cold War, this was a huge PR disaster for Mikhail Gorbachev and the Soviet Union, which was dissolved five-and-a-half years later. Gorbachev himself has said that Chernobyl was the main reason for the fall of the Soviet Union as the people stopped trusting him and the government after they kept so many secrets from them in the aftermath of the explosion. People as far afield as Scandanavia, Belarus and the UK were exposed to nuclear fallout as the radiation was carried by strong winds. Chernobyl released more than 100 times the amount of radiation from the Nagasaki and Hiroshima atomic bombs combined. The main health problem today associated with Chernobyl is thyroid cancer, which is still affecting people in Europe and North Africa to this day.

A sign in the town of Chernobyl, which is still uninhabitable to this day

© Alamy, Corbis

Bluffer's Guide NEW YORK, 1939-1940

1939 World's Fair

What was it?

The 1939 World's Fair was the second-largest US world's fair of all time and was held in Flushing Meadows, New York. With a focus on the future and a slogan of "Dawn of a New Day", the fair offered a chance for visitors to catch a glimpse of what the world of tomorrow may hold. Countries from all around the world contributed items and participated in the fair.

When was it?

Preparations began in 1935 and the fair and exhibits were planned and built over a four year period. On 30 April 1939, a very hot Sunday, the fair opened its doors to over 200,000 visitors. The fair was open for two seasons, from April to October, and closed for the last time on 27 October 1940.

Who did it involve?

President Franklin D Roosevelt opened the fair and Albert Einstein also gave a speech discussing cosmic rays. Walt Disney was involved in creating a pavilion for the fair, which also received royal visitors from Britain in the form of King George VI and Queen Elizabeth.

Light shows and spectacles were a regular occurrence at the World's Fair

International relations

Over 50 foreign countries contributed to the fair and built pavilions to house their displays. These pavilions told the tale of the war unfolding overseas. The Polish and Czechoslovakian pavilions did not open in 1940, Germany declined to participate in 1939 and the USSR pavilion was dismantled.

Business venture

The fair was created by a group of New York businessmen at the height of the Great Depression. The idea was to lift the spirits of the country in the wake of the depression, as well as to drive business to New York. As the growing Nazi threat loomed, the fair also promoted peace and unity between nations.

The World's Fair featured a host of striking buildings and bold architecture

Education vs amusement

The original intention of the fair was to enlighten and educate the masses. Scientists such as Harold Urey and Albert Einstein were keen to see the fair present new scientific thoughts and ideas. However, the most popular section of the fair was its amusement area, and more focus was put on this in the second season.

The birth of the new age

A speech by Roosevelt was televised during the opening of the Fair and 200 television sets were placed around New York by the organisers so that those without a television could watch for themselves. Other firsts at the fair included air conditioning, fluorescent lamps, colour photography and the first public appearance by Superman during the 'Superman Day' event.

Financial disaster

Before the 1940 season the fair employed the banker Harvey Gibson in an effort to control the fair's overrunning budget. But the financial damage was out of control; although attracting over 45 million visitors and $48 million in revenue, there had been investments of over $100 million and bankruptcy was declared.

The world of tomorrow

An exhibit created by General Motors called 'Futurama' allowed visitors to sit in moving chairs and tour a huge scale model of a futuristic city. Located in the US countryside, the exhibit covered 3,250 square metres (35,000 square feet) and featured over 500,000 buildings, one million trees and 50,000 vehicles, making it the largest scale model ever created.

Many exhibits displayed concepts and new materials that would become available over the next few years

Key figures

Grover Whalen
1886-1962
The president of the committee behind the fair, he starred on the cover of *Time* magazine.

Robert Moses
1888-1981
Dubbed a 'master builder', the New York City Parks Commissioner worked closely with the committee during the building stage.

George Washington
1732-1799
The opening coincided with the 150th anniversary of Washington's inauguration, and featured a towering statue of him.

Johnny Weissmuller
1904-1984
The famous swimmer and Tarzan actor featured in a synchronised swimming performance, the Billy Rose Aquacade.

Fiorello Henry La Guardia
1882-1947
La Guardia was the 99th mayor of New York and played a major role in the fair committee.

Major events

The Great Depression
4 September 1929
A worldwide economic depression causes unemployment to rise to 25 per cent in the USA.

Nycon I
2-4 July 1939
The world's first science-fiction convention is held in the Caravan Hall in conjunction with the fair.

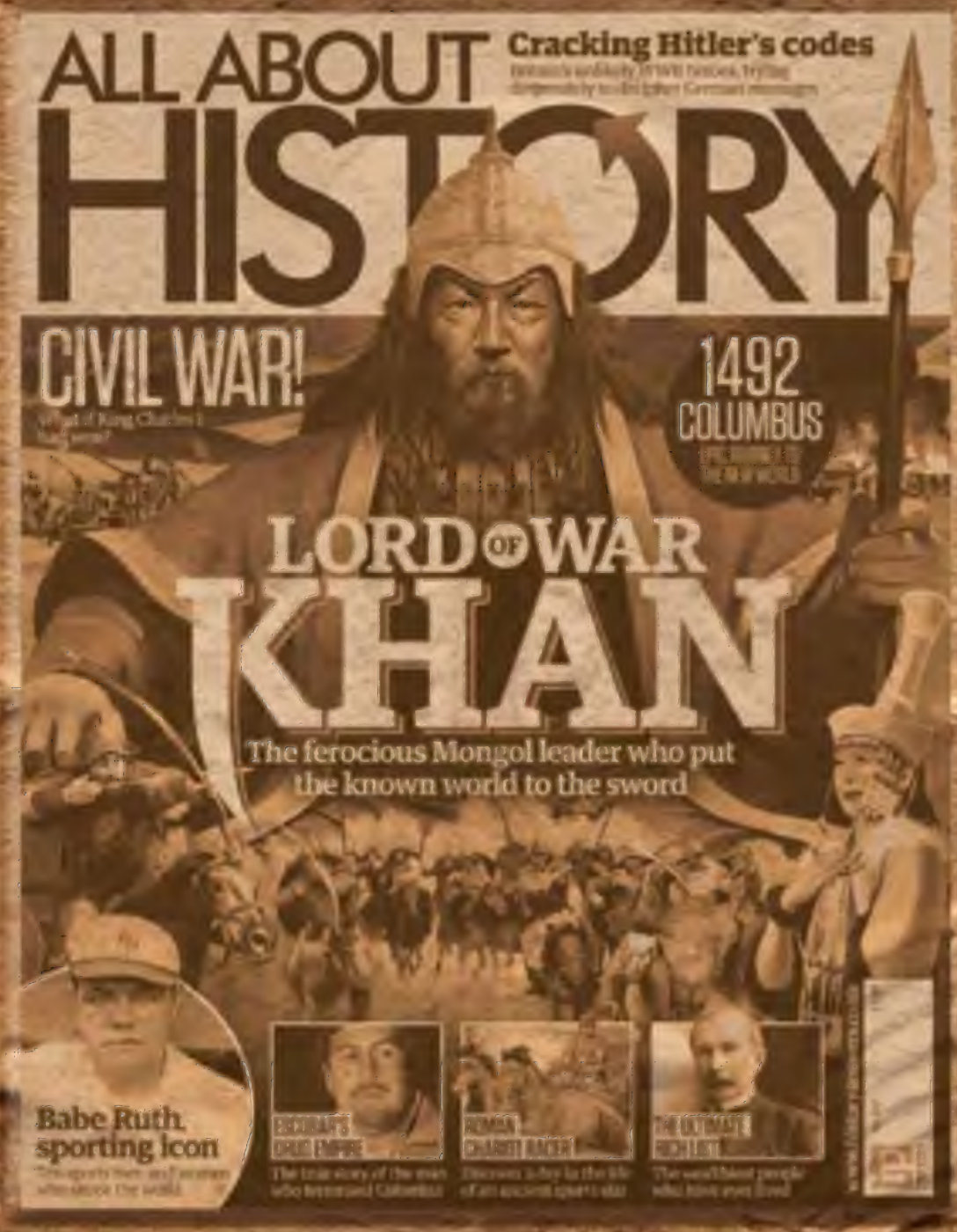
Superman Day
3 July 1940
A special event day is hosted by the fair, featuring an appearance by fictional superhero Superman, and the crowning of a Superboy and girl of the day.

Explosive trouble
4 July 1940
While investigating a time bomb left at the British pavilion two New York police officers are killed in a blast.

Closure
27 October 1940
After struggling for a long time with budget overruns, the fair is forced to close for good.

© Alamy, Corbis

DISCOVER



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35 STUNNING FACTS KHAN

Empire builder, conqueror and warlord, discover 35 facts about the man who decimated entire civilisations and established a new world order

Written by Frances White

On the freezing plains of Mongolia, tribal warfare ravaged the land. Entire villages were burned to ashes overnight, children murdered in their beds and women stolen like property. It was in this atmosphere of fear and uncertainty that a boy called Temujin was born. Son of a tribal chief, the hot-headed young boy would come to change everything it meant to be Mongolian. Cast out from his tribe before reaching manhood, he returned in a blaze of fire and blood, destroying any who dared to question his god-given power. Under him, the eternal war of the tribes ceased and he was proclaimed universal ruler, king of kings and prince of all that lies between the oceans: Genghis Khan.

The Mongolian lands were his, but this was not enough for Khan, who had set his sights on loftier prizes. Arrows loaded and bows drawn, his hoard of ferocious warriors rode through Asia, trampling all who lay in their path. Mountains of bones and fields drenched with blood served as a warning of the unbridled power of his mounted warriors, and the great Khan's empire grew and grew. But through his brutal conquests Khan had achieved something remarkable. Albeit at swordpoint, the empire was united, trade flourished, those previously persecuted for religion were welcomed with open arms and men of ordinary birth rose to command armies if they had the skills needed. In the hundreds of years after his death some would call him father of the Mongols, others a terror that scourged the land and some a visionary; but no one has ever doubted that Genghis Khan was a true lord of war, one who took what he wanted and changed the face of the world forever.

GENGHIS KHAN

Mongolian, circa 1162-1227

Brief Bio

Born as Temujin, Genghis Khan united the warring tribes of Mongolia into the mighty All Mongol State and appointed himself as all-powerful ruler. Through his cunning tactics and brutal military crusades, the Mongol Empire eventually grew to become the largest contiguous empire of all time.

SWORD

HACK AND SLASH

The sword of choice was a curved scimitar, able to be used with a one handed or two-handed grip and with a length of 1m (3.3ft). It was designed to be easily wielded on horseback and was usually used for wide slashing attacks.

01 His Mongolian horse warriors were perfectly equipped for battle

ARROW

PIERCING THROUGH ENEMY DEFENCES

Different arrows were used depending on the situation; the whistle arrow was hollowed out and produced a whistling sound when fired, perfect for striking terror into the enemy. Flaming arrows were also used to cause horrific wounds to their enemies and destroy wooden villages and cities.

BOW

THE MIGHTY MONGOL WEAPON

Mongolian warriors used many different types of bows, all smaller than the bows used today. With an impressive range of over 500m (1640ft), traditional bows were made from bamboo, horn and sinew, all bound together with animal glue.

ARMOUR

MINIMUM PROTECTION FOR MAXIMUM FLEXIBILITY

Mongolian armour was crafted from a combination of boiled leather and steel plates worn on the chest, boots and arms. Although not as advanced as others at the time, the combination of light and heavy armour would provide protection while retaining the flexibility needed to use their bows.

02 Horses were spiritual companions

To the Mongols horses were more than just pets, workers or war steeds, they were essential spiritual companions. Every warrior would be accompanied by a herd of horses as remounts and while three to five was average, some individual herds had as many as 20 horses. Genghis Khan utilised these armies of mounted warriors to cross treacherous mountains and once said, "It is easy to conquer the world from the back of a horse."

03 An estimated 40 million people were killed under Khan's rule, which if true makes him more vicious than Hitler and Stalin combined

04 Mongol warriors used cunning fighting tactics

1. Death from above

The Mongols would start the battle by showering the enemy with a brutal slew of arrows. These armour-piercing arrows were designed to decimate enemy lines and cause terror to spread across the battlefield.

2. Unstoppable wave

The warriors would then engage in a brutal cavalry charge. They used lances with hooks to throw men from their horses, before closing in with their swords or battle axes when the enemy was disorientated and defenceless.

3. Fake retreat

A common tactic used was a feigned retreat. A smaller, Mongol force would act as if they had been defeated, and then panic and run away. These fake retreats could stretch into days and weeks to lure the enemy into dropping their guard.

4. Take advantage

Once the enemy was drawn out, the Mongols would pivot and attack the unsuspecting men. They would also frequently lead the enemy toward hidden archers who would unleash a barrage of deadly arrows.

5. Final assault

Once the enemy was scattered, warriors with melee weapons would flood the battlefield and deliver the finishing blow. The Mongols would decimate their foes with swords and battle-axes.

06

During Soviet rule, in an effort to erase any trace of Mongolian nationality, any mention of Khan's name was banned

05 He was brutal

The attack on Samarkand

Upon the fall of their city, the population of Samarkand, Uzbekistan, including women, children and even pets, were assembled outside. They were all brutally slain and a pyramid of their severed heads was erected as a symbol of victory and warning to any others who dare oppose the Khan's power.

Assault on Urgench

Towards the end of the Mongol invasion of Khwarezmia in 1281 to 1221, all the women and children of the city of Urgench were sold as slaves, while the remaining population was killed. The ancient scholar Juvayni estimated that 50,000 soldiers executed approximately 1.2 million people in the city.

Measuring against the linchpin

When Khan defeated Jamukha's tribes in 1202, he forced the males to walk beside a wagon wheel. There was a pin inserted at the end of the axle, known as a linchpin - any man whose head was higher than the linchpin was considered a threat and immediately executed.

07 Scores were settled

Khan saw the opportunity to establish links with the Khwarezmia Empire as a trading partner, so sent a goodwill caravan filled with 500 men to start the process. The Khwarezmia governor had other thoughts, though, and attacked and looted the caravan. Undeterred, Khan sent a further three ambassadors to the Shah himself. What the Great Khan received back was one of their heads; it would prove to be a fatal mistake for the Shah. Outraged, the lord of war arranged one of his largest invasions ever. 200,000 Mongolian soldiers quickly defeated the Shah's forces and the governor was captured and executed by having molten silver poured into his ears and eyes. All remnants of the empire were destroyed, populations decimated, entire towns burned to the ground. A river was even diverted over the emperor's birthplace to wipe it from existence.

08 The weather was kind to him

Genghis Khan and his Mongol tribes competed with a challenging environment of unforgiving deserts in the south and deathly cold mountains in the north and west. Battling extremely cold winters as low as -30 degrees Celsius (-22 degrees Fahrenheit), and suffering from an intense drought, resources were low and tensions were high. However, in 1211 a stroke of luck blessed the lands with the wettest and warmest weather for approximately one thousand years. The heavy rainfall undoubtedly aided Khan's rise as the grass that fed the Mongol's all-important horses and livestock grew in abundance. Khan's army benefited from the much-needed horsepower and ample supply of meat to wage its epic conquests against the world. The heavy rainfall ended in 1225, two years before the death of the great Khan.

09 He had a difficult upbringing

As the son of a clan leader, young Temujin's future should have been straightforward, but fate had other ideas. When his father was poisoned by the rival Tatar tribe, Temujin tried to claim his rightful place as chief, but the clan weren't impressed. Deemed too young for leadership, the not yet ten-year-old boy and his family were cast out of the tribe and left to fend for themselves in the unforgiving Mongolian wilderness. It was during this refugee-like period that Temujin caught his older half-brother hiding food - he killed him, instated himself as head of the family and saved them from starvation.

10 Quality was the key to his military success

Khan's command structure

Khagan
Translated to 'Khan of Khans' or 'king of kings', a Khagan was the equivalent of an emperor. The Khagan held supreme power and had the final say of all matters concerning his empire. The title would be passed down to the chosen heir, usually the Khan's son, upon the death of the reigning Khagan.

Kheshig
The Kheshig served as the imperial guard for the Khagan and his family. Divided into a day guard and a night guard, the Kheshig would ensure the safety of the Mongol royalty. The Kheshig were separate from the Mongol army and would not join them in battle.

Noyan
Noyans were military generals who were in charge of units of Tumens (a unit of 10,000 soldiers) and sometimes Mingghans. While their main task was commanding forces and waging warfare, they also organised the administration of captured territories and were regarded as Mongolian aristocracy.

Mingghan
A Mingghan would command a military force of thousands of men, comprised of 100 arbans. These commanders earned their position by showing their worth in the battlefield.

Zuut
A Zuut was a force of hundreds of men who selected their own leader from their lines. The delegate enjoyed relative freedom in battle to give orders and take actions he considered best, but had to report to the leader above him.

Arban
Similar to the Zuut, an Arban was a force of ten men who would elect their own leader. The men in unit were expected to show strict loyalty to one another, and if one soldier fled from battle then all in his Arban would face the death penalty.

11 The Mongols were a group of warring tribes

When Genghis Khan of the Borjigin clan began his ascent to power the Mongol land was split between many tribes. The roots of the divisions and feuds between these tribes extended far into the past and any chance of peaceful resolution was marred by constant fighting, burning of villages, murder, raping and pillaging. In reality, the Mongol clans were so focused on fighting each other and expended so much energy and manpower doing this that they didn't really pose a major threat to any other power.

Three Mongolian tribes:

Kerait
Known for their dark features and black hair, earning the nickname 'Black Tatar.' Genghis Khan was named after their famous leader, Temujin Uge.

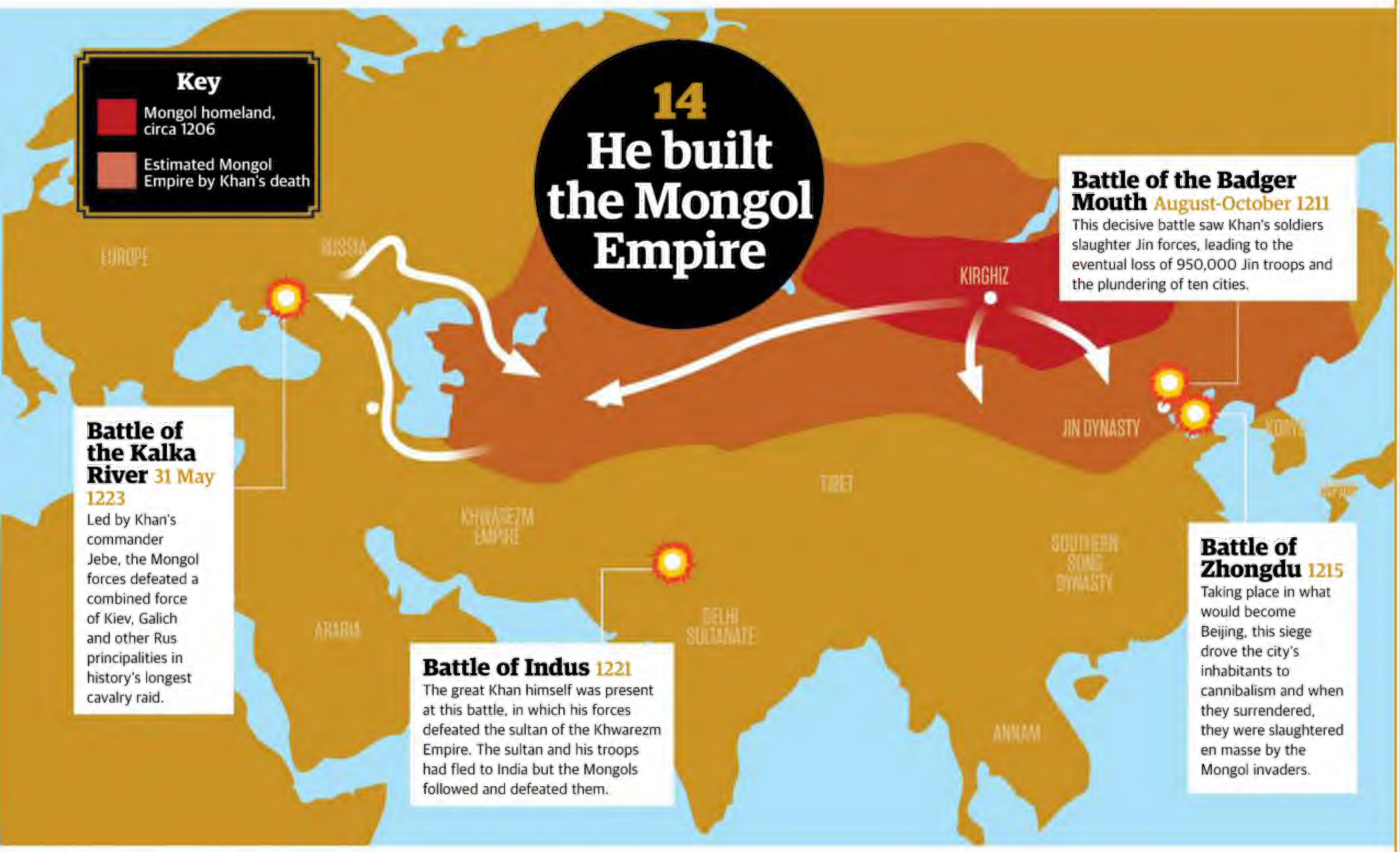
Naimans
When this tribe elected Genghis Khan's childhood friend Jamukha as 'universal ruler' they received the full wrath of Khan as a result.

Mergid
This Mongolian tribe are known for kidnapping Genghis Khan's wife Borte and casting doubt on the paternity of her first son, Jochi.

12
Legend has it that at Genghis Khan's funeral ceremony, 40 horses and 40 virgins were slaughtered in a ritual sacrifice

13 No one really knows what he looked like

Genghis Khan forbade anyone from sculpting his image, painting his portrait or engraving his likeness, and it was some years after his death that the first images emerged of the Mongol leader. Although we can't know for sure what he looked like, many sources describe a tall man with long reddish-brown hair, a beard and green eyes.


Key
Mongol homeland, circa 1206
Estimated Mongol Empire by Khan's death
14
He built the Mongol Empire
EUROPE
RUSSIA
KIRGHIZ
JIN DYNASTY
TIBET
KHWAREZM EMPIRE
SOUTHERN SONG DYNASTY
ARABIA
DELHI SULTANATE
ANNAM
Battle of the Badger Mouth August-October 1211
This decisive battle saw Khan's soldiers slaughter Jin forces, leading to the eventual loss of 950,000 Jin troops and the plundering of ten cities.
Battle of the Kalka River 31 May 1223
Led by Khan's commander Jebe, the Mongol forces defeated a combined force of Kiev, Galich and other Rus principalities in history's longest cavalry raid.
Battle of Indus 1221
The great Khan himself was present at this battle, in which his forces defeated the sultan of the Khwarezm Empire. The sultan and his troops had fled to India but the Mongols followed and defeated them.
Battle of Zhongdu 1215
Taking place in what would become Beijing, this siege drove the city's inhabitants to cannibalism and when they surrendered, they were slaughtered en masse by the Mongol invaders.

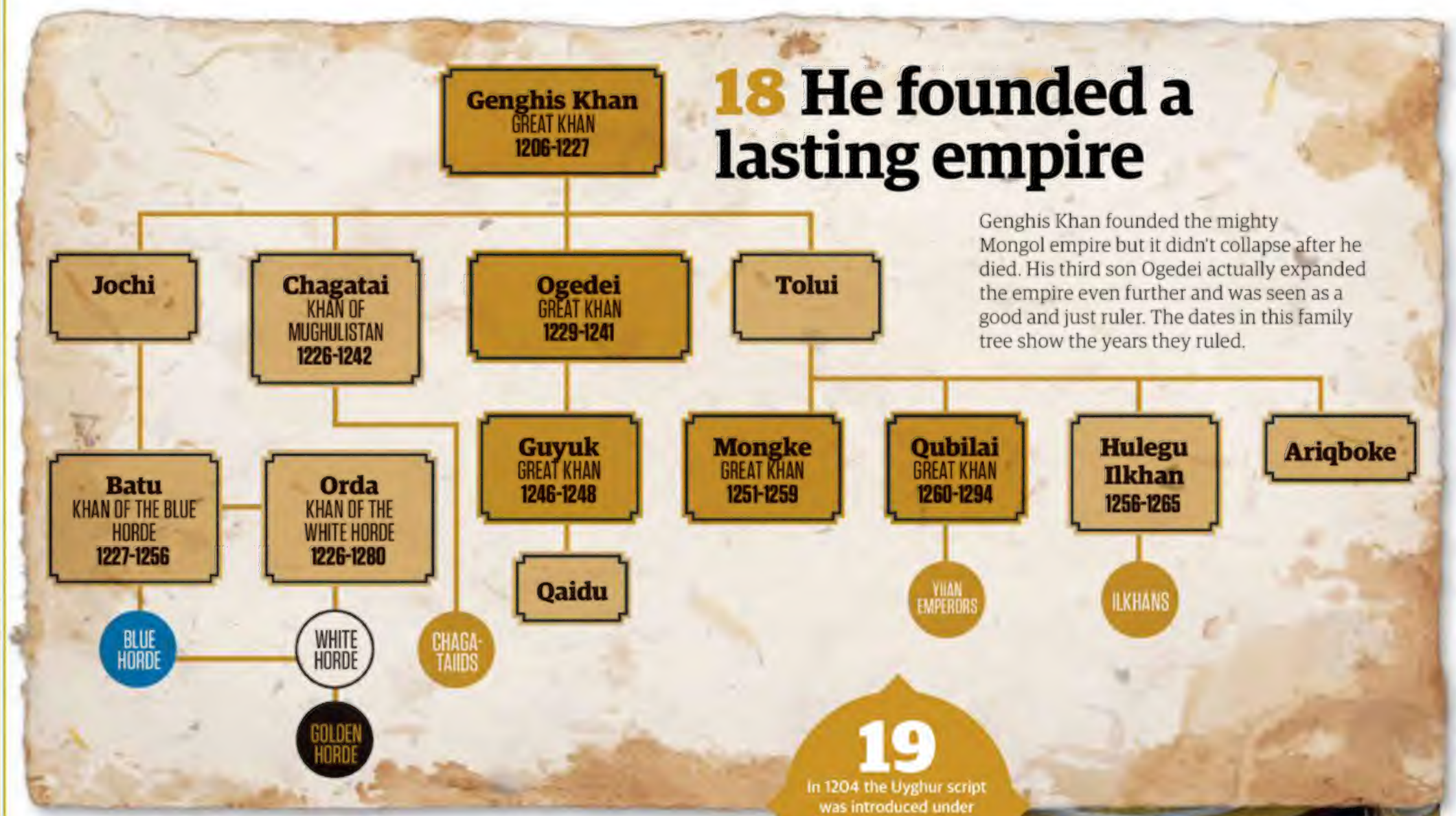
15 He built worldwide trade routes

As a proof of his vision and cunning, Genghis Khan understood that trade was of vital importance in order to ensure the economic survival of his empire, and it quickly became his priority. With a newly conquered vast land beneath his feet, Khan was keen to establish trade routes with Asia and Europe, as the Mongols themselves produced very few goods of value. The unified land that the great Khan had created meant that travel across Asia was made much easier for Europeans and Western traders like Marco Polo. Artists and craftsmen flooded into the empire, creating settlements along the main trade routes and new artistic influences began to meld with established traditions across all of Eurasia. What followed was a period of artistic and cultural flowering in the wake of bloody and brutal conquest.

16
Khan created the Yassa, a code of laws, which promoted obedience to him, unity of tribes and punishment of crimes

17 Religious freedom was encouraged

Unusually for a mass conqueror, Genghis Khan encouraged religious freedom and tolerance throughout his empire. Rather than stating Mongolian dominance, he embraced the differing cultures of the lands he conquered. This openness with religion meant Khan could benefit from those exiled or persecuted elsewhere because of their beliefs and utilise their skills for his own empire, as well as develop a network of spies. Many Muslims seeking peace from religious persecution sought out the great Khan and his acceptance of all religions earned him the title 'defender of religions.' Within Khan's inner circle there were Buddhists, Muslims, Christians and animists like Khan himself. He often discussed spirituality at great length, even summoning the Taoist leader Qiu Chuji to try and obtain the secret of immortality.



18 He founded a lasting empire

Genghis Khan founded the mighty Mongol empire but it didn't collapse after he died. His third son Ogedei actually expanded the empire even further and was seen as a good and just ruler. The dates in this family tree show the years they ruled.

19
In 1204 the Uyghur script was introduced under Genghis Khan – this was the first-ever Mongol writing system

20 He had many wives and concubines

As per the Mongol tradition, Genghis Khan was betrothed to the daughter of a tribe chief at a young age. Soon after they were wed Khan's wife, Borte, was kidnapped by a rival tribe, prompting Khan to form alliances in order to rescue her, propelling his rise to power. Although Khan had at least six wives during his reign, only Borte's sons were eligible for succession. All of Khan's wives ruled their own court, were given regions as territory and would even rule in his stead when he was unable to.

It was common practice for Khan and his Mongol horde to divide captive women between them after a successful conquest. Khan was said to be fond of women with small noses, long hair, rounded hips, red lips and melodious voices, and they would always be from the highest rank. He measured the women's beauty in carats, and women rated a low number were given to his officers. Although we can't know the exact number, it's estimated that Khan had at least 500 concubines. He once expressed his fondness for the opposite gender by saying, "The greatest pleasure is to vanquish your enemies and chase them before you, to rob them of their wealth and see those dear to them bathed in tears, to ride their horses and clasp to your bosom their wives and daughters."

21 He brought stability to the Silk Road

A brief history of the famous trade route

The Silk Road served as a vital trading route, connecting the West and East. After enjoying a flourish of trade in the Tang era from 618 to 907 CE, the route was ravaged with frequent looting of caravans as political unrest plagued the region. Although brutal, Khan's conquest of Asia unified the warring states and brought a new stability to the trade network. Once again, the Silk Road could safely be used by traders who claimed, "a maiden bearing a nugget of gold on her head could wander safely throughout the realm."

139-129 BCE
The imperial envoy Zhang Qian takes several journeys to the western regions and his findings reveal ample opportunity for trade not being exploited.

133-67 BCE
The Chinese army defeats the Xiongnu, a nomadic people. By establishing themselves in central Asia, the Silk Road is opened for international trade.

60 BCE
The Han dynasty establishes the Protectorate of the Western Regions. This protects trade from bandits and greatly increases the safety of trade.

618-907 CE
As the powerful Imperial Tang dynasty is established, the Silk Road experiences its golden age as its route becomes even safer than before for traders using it.

22 He became an expert of siege warfare

Many of the citizens living in China believed their strong city walls would protect them from the Mongol threat as they had previously waged death and destruction on horseback. However, through his skilled captives, Khan became a master in the art of siege warfare and soon not even towns behind sturdy walls were safe. It was through this skill that many cities in China fell to the lord of war.

Starvation
The Mongols would utilise the classic isolation technique of cutting off all supplies to the city. During the Battle of Zhongdu Khan's armies intercepted and feasted on the supplies headed to the city while inside the population starved to death.

Catapults
Catapults would be built at the scene of the siege by skilled Chinese and Persian engineers absorbed into the Mongol ranks. These mighty siege machines launched stones, animals and fiery bombs over the walls.

Deception
A common tactic during sieges was to create straw soldiers which were mounted on horses and to light extra campfires to make the army appear far larger than it actually was, frightening the enemy into surrender.

Kharash
Captured local residents or surrendered soldiers would be used in sieges as human shields. The captured foes protected the main Mongol force from the slew of arrows by being forced ahead in battle.

25
While a young boy, Genghis Khan was kidnapped. His escape elevated his reputation throughout the Mongol nation

23 His mightiest weapon was fear

Khan presented his enemies with a choice - surrender or die. It was far more preferable to the Mongols for their enemies to surrender peacefully than losing soldiers, money and food through combat, and protection was offered to any town that wouldn't put up resistance. Of course, any opposition would be met with mass destruction and death. Khan deliberately shaped public opinion, similar to modern-day propaganda, but his object was the opposite - he wished to create an aura of terror around himself. Tales of destruction, inflated death-toll numbers and written accounts of his brutal conquest by scribes were all used to build an atmosphere of fear, and hopefully encourage terrified obedience among any who stood in his way.

24 He was an eco-warrior

As a result of Genghis Khan's brutal conquests, entire civilisations and vast plains of territory were decimated; this had the knock-on effect of allowing previously populated and cultivated land to flourish. Carbon-dioxide levels plummeted and new trees absorbed as much of the gas as is now produced in a year worldwide by petrol.

26 Khan's execution squads were merciless

Historical sources claim Genghis Khan's conquests resulted in horrifically high numbers of casualties, such as 2.4 million at Nishapur and 1.6 million at the sacking of Harat. Although it's difficult to ascertain the reliability of these figures, it does indicate the terrified state of mind the invasions created. The unfortunate population of a captured town that didn't surrender were ordered to stand outside while Mongolian troopers executed them one by one with a battle-axe. The soldiers were commanded to kill a certain number of people each, ten, 20 or 50, and it wasn't uncommon for the soldiers to obtain 'proof' of their deeds by cutting off an ear of each victim. Escape was nigh-on impossible, as the Mongol horde would return after the massacre to search the city for anybody left behind the first time around.

907-1207
Security along the route falls with the Tang dynasty. Once again trade caravans are plundered by various nomadic tribes, making the route less profitable.

1207-1227
Genghis Khan's conquests and unification of states encourage interaction between different cultures and the route becomes an important communication path.

1287-1288
After Khan's death the Silk Road continues to provide a reliable route for transportation of trade - Marco Polo's tales lead more Western traders to use the route.

27 Enemies were turned into allies

Genghis Khan is commonly portrayed as being brutal and merciless, but his intelligence and cunning is often overlooked. Rather than simply having his men plough through the cities he captured, he hand-picked the mightiest soldiers and brightest minds and welcomed them into his empire. It was thanks to this that his armies had men with knowledge of siege warfare, enabling the great army to take fortified cities. During the Battle of the Thirteen Sides, Khan was injured by an arrow to the neck. He demanded to know who fired the arrow and, when an archer named Jebe admitted his act, Khan praised him for his aim and honesty. Jebe went on to become one of Khan's greatest and most loyal commanders.

28 An early postal service was created

Genghis Khan's empire was not only built on fire and warfare, but also a vast communication network known as the Yam. The Yam consisted of a long chain of way stations and post houses that stretched all the way across his empire. Once a messenger reached a station, he needed only relay his message or hand the document to the messenger waiting there, who would ride to the next outpost until the message was delivered. This ingenious network allowed information to travel faster than ever before and each station would provide spare horses, food and shelter. Soon the Yam was being used to transport more than mail, with military, travelling officials and even famous figures such as explorer Marco Polo utilising its ingenious structure.

29 He has 16 million living relatives

Although claiming descent (often erroneously) from famous or powerful people has been a popular exercise throughout history, modern developments in DNA testing have discovered that more people than previously imagined may be directly related to the Great Khan. A 2003 study revealed that close to eight per cent of men living in the former Mongol Empire carry identical Y-chromosomes. That eight per cent is 0.5 per cent of the male worldwide population, which translates to a staggering 16 million descendants alive today. This lineage has been tracked to about 1,000 years ago, and the very special set of circumstances required for such a vast spread of DNA lead to one man - a certain Genghis Khan. His empire spanned from Asia to the Caspian Sea and was characterised by widespread brutality and rape. The number of offspring his own sons boasted was staggering, with his eldest alone having a reported 40 sons and numerous daughters. Although this theory is impossible to ascertain without a sample of Khan's own DNA, it does seem likely that these identical chromosomes are linked in some way to Khan.

The Khan's descendants include

8%

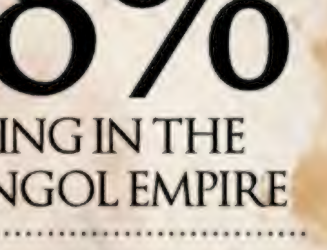
OF MEN LIVING IN THE FORMER MONGOL EMPIRE

0.5%

OF WORLDWIDE POPULATION

16 MILLION

WORLDWIDE (ALMOST DOUBLE THE POPULATION OF LONDON)



30

There were long-standing doubts over the paternity of his oldest son, Jochi, so his third son Ogedei was named successor

32 He is on a bank note

Despite many negative views of him, in Mongolia Genghis Khan is revered as a national hero. Many residents refer to the country as 'Genghis Khan's Mongolia' and themselves as 'Khan's children.' This image of Khan as the father of the Mongol people has elevated him to a godlike figure who united warring tribes and founded an empire. Many Mongolians even claim historical writings by non-Mongolians exaggerate his brutality and downplay his numerous positive contributions. Today, Khan's name and image can be found all over Mongolia, from candy bars and cigarettes to hotels. Countless statues of him have been erected and he even features on bank notes. A local story says that Genghis Khan will one day be reborn to return the Mongol nation to prosperity.

33 He believed in meritocracy

Khan challenged existing Mongolian ideas by promoting people based on worth rather than birthright. Although this caused friction among wealthy sons who expected to claim positions of power, it enabled his army to become one of the most powerful in history. Those who rose through the ranks were those who had shown their competence in battle, which led to a tight-knit army led by skilled warriors.

This also extended to daily life, as Khan abolished inherited aristocratic titles, a common catalyst for wars between tribes at the time. Rather than slaughtering his enemies en masse, he hand-picked the most skilled and capable to add to his ranks, regardless of nationality or race, so soon the Mongol Empire became culturally diverse. Khan was also clever enough to realise that he alone could not rule an entire empire, so he employed skilled administrators from conquered cities to govern in his stead, a task unsuited to the nomadic Mongol people. Of course, this meritocracy didn't extend to his own family, and he decreed that only a member of his family, 'the Golden Family', could claim the highest authority.

31

Khan believed he had been put in place by God and said "If you had not committed great sins, God would not have sent a punishment like me upon you"

34

An estimated 40 million people were killed under Khan's rule, which if true makes him more vicious than Hitler and Stalin combined

35 No one knows how he died

Genghis Khan died in August 1227, but the exact cause and nature of his death is unknown to this day. The common belief held by historians is that he fell from his horse while on a hunt and died soon after of injuries and fatigue. Others argue that he died from a respiratory disease, and the great explorer Marco Polo recorded that the great Khan died from an infection of an arrow wound. One of the more outlandish tales of his demise is that a captured Xia princess castrated him with a hidden dagger, though this is most likely propaganda created by his rivals and not historically credible.

His place of burial also remains a mystery. Following the traditions of his clan, Genghis Khan was buried in an unmarked grave and a river was diverted over it to make it impossible to find. To ensure secrecy, the funeral escort killed anyone they encountered along the way, so the lord of war's final resting place would never be disturbed.

Enigma

Written by Julie Hall

HOW BRITAIN'S CODEBREAKERS TURNED THE TIDE IN WWII

Discover how the men and women of Bletchley Park cracked the 'unbreakable' German Enigma and helped defeat Hitler's Nazis

It's February 1942; the carnage of World War II shows no signs of stopping and the balance of world power is precariously poised. Night is about to fall on the Atlantic Ocean and as darkness comes the water is inky-black and icy. In the depths of seas around the world, German U-boats cruise like predators stalking their prey. They lie in wait, patiently waiting their turn to pounce; brazenly, some even encircle convoys, sailing invisibly around them. On this night, one U-boat fires off its torpedoes and an American convoy ship is engulfed in bright flames that light up the sky. The crew on this convoy know they will perish in this icy sea and that the vital supplies and provisions they are carrying across the Atlantic to Britain will also be lost. As screams and shouts finally give way to an eerie silence, its neighbours can only watch helplessly, fearing their turn may soon come. The deadly wolf pack have claimed another victim. The Allies are virtually defenceless against them, knowing only that these deadly ships will strike again, but not where or when.

As the year draws to a close a German U-boat, the U-559, is spotted off the coast of Palestine by HMS Petard and subsequently depth-charged. This time it is the U-boat crew who know that all is lost: their vessel is sinking and they must abandon ship. Lieutenant Anthony Fasson, Able Seaman Colin Grazier and Tommy Brown swim out to it, even though the boat is rapidly sinking below the waves. Seeing some lights remaining on inside the boat, they are astounded to find a four-rotor Enigma (the machine the Germans use for communications) and a book of current Enigma keys. In an act of bravery and ingenuity, they wrap the machine, the keys and the bigram tables in waterproof material, and rescue them for the Allies, not realising how vital their discovery will prove to be. With supreme effort, they manage to reach 16-year-old Naafi boy Tommy Brown, who has waited outside the boat, and hand him the machine and the books. It is the last act of Fasson and Grazier, for they go down with U-559 as it sinks. They are both posthumously awarded the George Cross.

This treasure – for that is what it was to the British codebreakers – made its way to Bletchley Park, a country house in rural Buckinghamshire that had been set up as Intelligence Headquarters at the start of the war. Those based there knew they now had a good chance to get back into breaking the German naval codes, codenamed 'Shark', and affect the outcome of World War II. An eccentric young mathematician named Alan Turing would have a key role to play in breaking the Nazi code.

Born in 1912, Turing came to Bletchley from Cambridge, aged 27, the day after Britain declared war on Germany. His clothes were dishevelled, at best; others thought he often dressed like a tramp. When excited over some problem or idea, he would stutter with his eagerness to express his legion of ideas. He would often be seen riding his bicycle around the Bletchley countryside, wearing a gas mask to avoid the pollen that set off his hay fever. In his office, he would chain his coffee mug to the radiator so no one else would take it. With little faith in banking and currency during wartime, he put his money into silver bars which he then buried, intending to dig them up after the war – not realising that by the time he had followed his own elaborate set of instructions for finding them, a new town called Milton Keynes was being built over the countryside. To the onlooker, Alan Turing totally fitted the bill of a typical, eccentric, academic boffin; to his colleagues, themselves some of the brightest minds in the country, he was a true genius of his time.

The Allies knew the Germans were using a machine named Enigma and teams of codebreakers

German forces disuised their communications through the Enigma machine

Glossary

Enigma: Resembling an expanded typewriter, the Germans used this machine for communication. It is a portable machine that enciphers and deciphers messages using a keyboard, rotors and electrical impulses to generate millions of possible letter combinations.

Typex machine: Standard British cipher machine with special modifications so that it operated like Enigma, with rotors, keyboard and a paper feed with a printer. It was used to turn encrypted text back into German.

Bombe: Not a computer, but an electronic machine that could check off, at speed, hundreds of possible letter combinations to reduce the potential number of that day's possible Enigma settings.

Crib: An intelligent guess by looking for patterns in the coded text, usually found in common phrases or words used by the German operators, or sometimes by spotting their mistakes, such as a repeated word lazy use of their girlfriend's name or a rude word.

Cillis: Procedural errors by German Enigma operators, where they used recognisable message settings instead of random, or had failed to alter the rotor wheel position before sending their text.

Menu: A set of diagrams based on that day's 'cribs', to feed into the Bombes to help reduce the length of time needed to confirm that day's Enigma settings.

Wrens: Members of the Women's Royal Naval Service.

Colossus: The world's first semi-programmable computer. A practical, digital processing machine, it used 1,500 valves and could do mathematical calculations in hours that had taken weeks by hand.

The 'unbreakable' Enigma

Discover the main devices on the complicated and portable German communications machine

Rotors
The standard Enigma had three rotors, the advanced machine had four. These scrambled messages into unintelligible cipher text. Each rotor had numbered ring scales for each of the German Armed Forces and the rotors could be changed daily. The settings were changed at midnight and each rotor could be set to any one of 26 different ring settings.

Keyboard
As the operator pressed one of the 'typewriter' keys, an electric current was sent through the rotating code-letter wheels. No enigma letter could ever be enciphered as itself. The recipient operator would type into his machine the received Morse message in the same order.

Lampboard
Each typed key sent an electrical impulse through the machine and a letter would light up on the adjacent lampboard. This would be repeated until the whole message had been enciphered, when it would then be radioed in Morse to its recipient. The lampboard would light up with the real letters as the cipher was typed in.

Plugboard
This made the machine's wiring much more complicated, increasing the possible encoding combinations by millions. The plugboard settings could also be changed daily. The A-socket of the plugboard connected to the first terminal inside the entry plate, the B-socket to the second, and so on.

DILLY KNOX
British, 1884-1943

Brief Bio

Knox worked with Turing from September 1939 at Bletchley, from where the first breaks into daily-changing Enigma were made. Knox and his team, Intelligence Service Knox, broke the German Secret Service (Abwehr) codes in December 1941. An Old Etonian and a student from King's College, Cambridge, Knox was regarded as brilliant but eccentric. His background was in classics rather than mathematics.

"For the duration of the War, Hitler believed Enigma to be unbreakable, especially after the German Army changed the cipher daily instead of once every few months"

at Bletchley were trying to crack the code this machine used. The teams worked in newly constructed prefabricated huts, each given a number instead of a name for secrecy. In Hut 8 they were concentrating on cracking the German Naval ciphers. They already knew that Naval Enigma operators were more careful than Army operators, thus making it harder to use educated guesses, or 'cribs', to spot German mistakes. But now they realised the number of possible settings were hugely expanded, due to the increase in code wheels on the four-rotor Enigma. Turing, already working on updating the Polish Bombe machines, realised the vital importance of having machines that could speed up the process by mechanically checking off these millions of settings combinations.

While at Cambridge before the war, Turing had developed an original idea: a 'Universal Turing Machine', a sort of 'super-typewriter' that could identify symbols, write, erase and carry out other tasks, all automatically and without human intervention. However, having studied previous Polish encription machines and a replica Enigma, Turing knew he needed more than even his hypothetical machine. So he studied the mechanics of Enigma, the rotors, wiring and boards, and sought to devise an electrical system with circuits that could decrypt that same text.

Human intervention, Turing knew, was still essential: 'cribs' and mathematical work would still be needed to help the Bombe machine, the device that would decipher encrypted German messages. The thought of a machine capable of checking millions of combinations at speed was revolutionary. However, Turing was a theoretician rather than a practical codebreaker, so Gordon Welchman, a codebreaker and brilliant administrator working in Hut 6, recruited Oliver

A brief history of WWII's codemakers and breakers

1923 – Invention
A Dutch invention, the first cipher motor machine is patented by Dr Arthur Scherbius, who markets it at the 1923 International Postal Union Congress for use in banking, but it proves unsuccessful. Enigma is marketed for use in Germany's armed forces instead for its potential for military use.

1932 – The Poles
Three Polish mathematicians – Marian Rejewski, Henryk Zygalski and Jerzy Rozycki – make the first break into military Enigma using mathematical methods. This includes the invention of Zygalski sheets, a slow and time-consuming method that was used in the days before advances were made to the Enigma machine.

1939 – Sharing secrets
In July, a secret meeting takes place in Poland between representatives of Bletchley Park (Peter Twinn, Dilly Knox, Alan Turing and Tony Kendrick) and Gustav Bertrand of French Intelligence, to share discoveries made since 1932 by Polish cryptanalysts. By September, the Poles have passed models of Enigma to British intelligence.

1940 – Breaks, Bombes and tips
In January the 'Green' (Army) and 'Red' (Luftwaffe) Enigma keys are cracked and in February the sinking of U-33 brings Bletchley its first 'pinch': an Enigma machine. By March the first Bombe machine, 'Victory', is installed into Hut 1 and later that year a new Enigma key is introduced.

Step-by-step guide to codebreaking

Follow our six-point guide to crack codes like they did in Bletchley Park

01 Listen to the enemy to gather the intelligence

At Station X, Bletchley originally used a radio-transmitting room at the top of the Mansion House's turreted tower to intercept Morse, teleprinter and radio codes. However, Bletchley's secret location needed protection, so a series of 'Y' stations were set up across the country. Intercepts were sent to Bletchley either by motorcycle courier or by direct teleprinter line, and were logged into the Registration Room.

02 Break the cipher using mathematics and cribs

Using brainpower and ingenuity, the codebreakers first worked by hand by looking for features that corresponded to the original plain text. Using cribs and contact analysis, the codebreakers could often spot a possible pattern in the text. Human error on the part of the operators and psychology (imagining how the operators might undertake their work) also came into play when looking for cribs.

03 Make sense of the nonsense

Process and check that day's 'cribs', then set up the Typex machines to the same settings as the Enigma machine and type in the enciphered message. Once deciphered it would come out on long strips of paper; cut and glued onto the back of the original message, they were sent back to Hut 6 to finish any decryption left over, via a specially built chute, and then ultimately to Hut 3 for final translation and strategic analysis by a special team.

04 Translate and understand the German plain text

Hut 3 would use linguists to translate German, Italian and Japanese codes, using the decrypted text sent from Hut 6. At this stage, the Index room would check and cross-reference to see if anything could be spotted that had been seen before, using Hollerith machines and thousands of index cards in Block C. Once analysed, the information was ready to send on as usable intelligence to Churchill in his daily update.

05 Send intelligence to Churchill and commanders in the field

Only a few commanders knew about Bletchley and were forbidden to act on its findings, codenamed 'Ultra', until the Germans had been deceived into thinking it had come from another source altogether. 'Special Communication Units' were set up to feed information to the field, first in France in May 1940, then in North Africa and elsewhere from March 1941. All 'Ultra' messages were destroyed once received.

1941

Cracking Dolphin

Using the 'rodding' technique, the Italian Naval cipher is broken after the Battle of Matapan by Dilly Knox and his 'girls.' With the recovery of Enigma coding documents and notebooks from German submarines, notably U-110, along with repetitive weather transmissions, Bletchley is finally able to read German Naval Enigma.

1942

Cracking Shark

In February, the Germans introduce a more complex four-rotor Enigma for U-boats: 'Shark', leading to a blackout. In October, two German short-signal codebooks arrive at Bletchley, rescued from U-559 by Fasson and Grazier on HMS Petard. Shaun Wylie and the Hut 8 codebreakers can now break Shark and read U-boat traffic.

1943

Colossus

The Germans introduce a new short weather code, but Hut 8 avoid another blackout with the help of the faster Bombes. Shark is re-broken within ten days – a deciding factor in the Second Battle of the Atlantic. Max Newman and Tommy Flowers design and build Colossus, the world's first semi-programmable computer.

1944

D-Day success

Hut 8 and Hut 4's crucial decryption and translation of German Naval Enigma plays a key role in the Double Cross deception, codenamed Operation Fortitude South, fooling Hitler into believing the Allied landings were planned for Pas de Calais and not Normandy, thus having a huge impact on the outcome of D-Day.

Eyewitness **Jean Valentine**

The former member of the Women's Royal Naval Service served at Bletchley

Image courtesy of Bletchley Park Trust

How did you come to be at Bletchley?
I grew up in Perth, Scotland, and when I was 18 I decided to join up. I took an intelligence test at a local Navy recruiting centre. When I got my summons, I was given a railway warrant to go to a training centre for Wrens in Dumbartonshire. After two weeks I was told I was going to be sent to London, but was not told what my work would be. I was then sent on from London to a Y Station in Eastcote, Middlesex, where I first saw a Bombe machine. Later I was sent to work at Bletchley Park.

Were you aware of the other work going on at the Park?
No, everything was compartmentalised. When I was working on the Bombes, if we got a possible result we would phone it through to an extension number: it wasn't until after the war that I realised I had been phoning Hut 6 just across the path! If the menu had worked and German text came out on the tape, it went to the pink hut just opposite Hut 11 where it was translated into English. Apart from that small section of the Park, I had nothing to do with any other work carried out elsewhere.

What did you do in your free time?
We used to go to the village hop on a free Saturday night. There were lots of clubs and societies at the Park, which men and women could attend if their shifts allowed and if they could get to and from their billets to attend: music, theatre, sports; [it featured] a huge variety.

What was the work like?
The shifts were quite arduous: 8am to 4pm, 4pm to midnight or midnight to 8am. Once you had learnt how to work the Bombe it wasn't complicated, just repetitive. The Bombe would search for answers and would stop if it thought it had found one. It was noisy, but like a tickety-click noise; it didn't really bother me, although it did others. We were young and disciplined and knew we were part of the war effort so we just got on with it. I found the work a rather fascinating experience; I enjoyed it! There were all sorts of people working at the Park, all different classes, and we just all worked together. Everyone was treated the same, whether military or civilian. The night shifts were a bit disruptive – especially on our eating patterns. There were some cases of burnout: I was once sent to the sick bay and slept for nearly three days! Then I had two weeks leave and came back refreshed.

What did you do after Bletchley?
In 1944 when I was 19 years old, I was sent to Ceylon to work on Japanese meteorological codes; I stayed there for 15 months. I never told a soul I was working at Bletchley Park. It was a great surprise when the first book came out in 1974 and the big secret was out. However, many people were uncomfortable with talking about Bletchley after all that time, and some are still.

Lawn, a mathematician from Cambridge, to help with the making of the machine; thus 'Victory', the first Bombe, was built and installed in Hut 1 on 18 March 1940. Welchman later improved the design of the Bombe with an electronic diagonal board, which increased the machine's powers and capabilities.

Although the German Air Force Enigma was by now being read daily, Naval Enigma proved a tougher nut to crack. In 1941, two significant sea battles – one inside the Arctic Circle, one in the Atlantic – led to the recovery of Enigma coding documents. It was with this information that Turing calculated a new method he called 'Banburismus', because it involved holes punched on long pieces of paper made at Banbury. For the rest of the summer of 1941, Bletchley was able to read the majority of German Naval Enigma, thus providing vital protection to British shipping and a real success story for Bletchley. A significant breakthrough had been achieved, but the team would face tougher battles as the war rumbled on.

The genesis of Bletchley occurs in August 1938 when, at a small rural railway station half way between the university cities of Oxford and Cambridge, a group of ordinary looking people arrive for a social gathering at Bletchley's Victorian country house. Led by Captain Ridley, the entourage are here to enjoy that simple but favoured pursuit of the upper classes: a shooting party weekend. Or are they? In fact, the group of men assembling at this isolated location in the depths of the Buckinghamshire countryside are all either members of MI6 and the Government Code & Cipher School (GC&CS), or esteemed scholars and academics, turned codebreakers. For now, they will assess the mansion house and its surrounding area as a possible location to site intelligence operations in the event of a war that seems likelier with every inflamed speech Hitler gives.

GORDON WELCHMAN
British, 1906-1985

Brief Bio

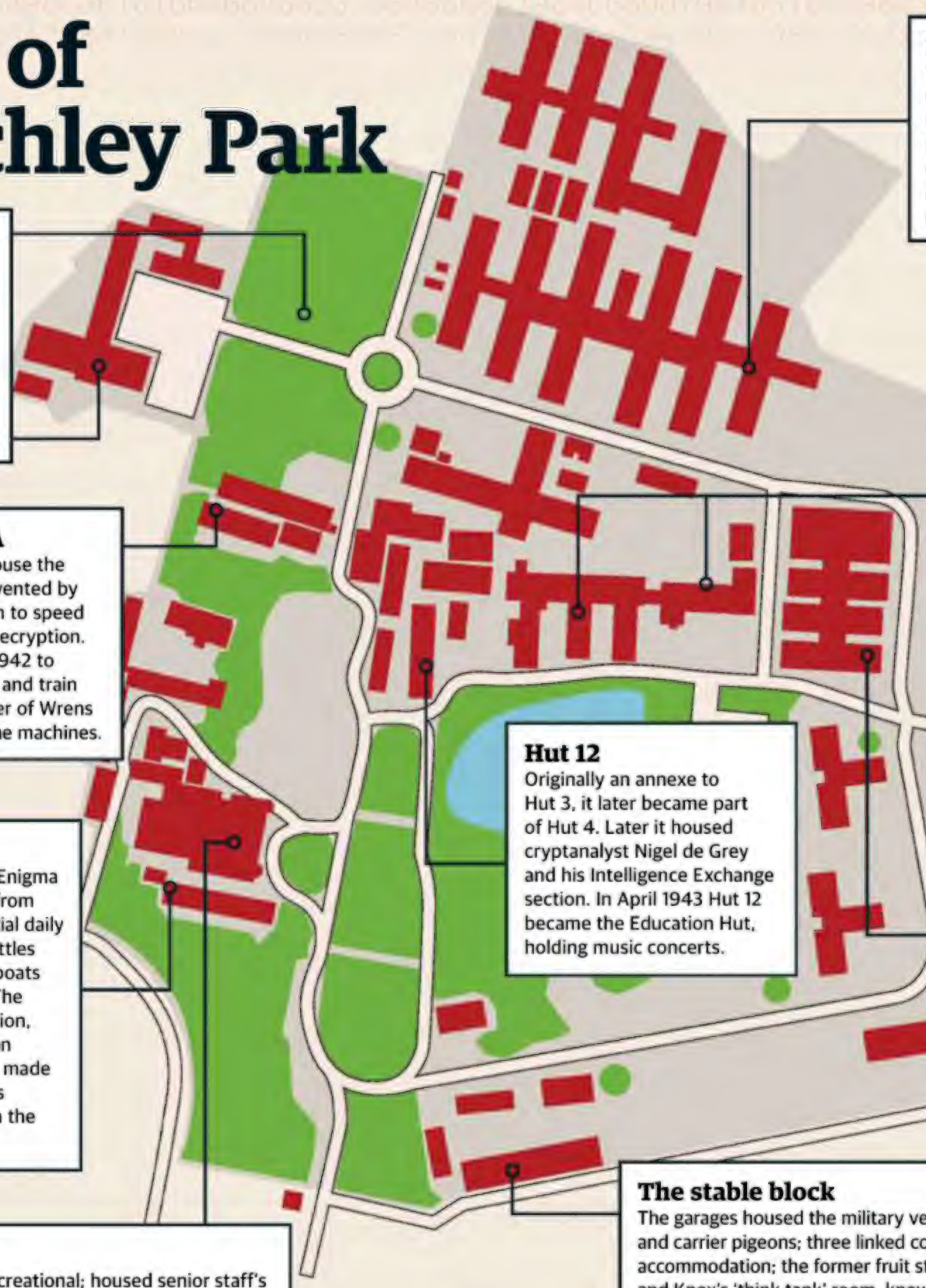
Recruited by Alastair Denniston from Cambridge, after a short two-week course in London in March 1939, he reported to work at Bletchley on 4 September. He instigated Hut 6 Traffic Analysis (SIXTA), and with his immense organisational skills he turned Bletchley Park from a cottage industry to an efficient organisation taking in intercepts and outputting intelligence 24 hours a day, seven days a week, every day of the year.

When the inevitable happens, they and others return to begin the work that some later believed shortened the war by two years. Men and women from all walks of life will descend onto the railway platform and begin the walk up to Bletchley Park: mathematicians, classicists, engineers, Wrens, WAAFs, linguists, typists, administrators and even debutantes. Each will become a small cog in a large wheel, working independently and under extreme secrecy, unaware of the work being carried out in any hut outside their own. Having signed the Official Secrets Act, they are aware only of the vital importance their work could be to the war effort and that they can never speak of it to anyone.

Despite their undoubted brilliance, it wasn't the British at Bletchley who first made a break into Enigma: that distinction belongs to another nation entirely. In 1932, the Polish had first cracked Enigma; at the time, the cipher changed only once every few months, but by the outbreak of the war it was daily. With the invasion of Poland imminent, they turned to the British for help in breaking the Enigma settings, now running at an intimidating 15 trillion possible combinations – that's a staggering 15 billion billion.

Teams of top codebreakers were installed at Bletchley Park in the prefabricated numbered huts. These teams were led by Dilly Knox, John Jeffreys, Peter Twinn and Alan Turing. The first breakthrough came with the unravelling of the administrative key used by the German Army, simply known as 'The Green.' This was followed by breaking the 'Red' key, which was used by the Luftwaffe. Of course, it was of paramount importance that the secret that Enigma's code was being broken was kept secure, so a cover MI6 'spy', nicknamed 'Boniface', was invented; throughout the war, Germany believed any breaks in intelligence came as a result of double agents working in the field, instead of a remote codebreaking team.

Map of Bletchley Park



Blocks F & H
These housed the Testery, Newmanry and the Heath Robinson and Colossus machines. Block F also housed Japanese codebreaking.

Huts 11 and 11A
Hut 11 was built to house the Bombe machines, invented by Turing and Welchman to speed up Enigma settings decryption. Hut 11A was built in 1942 to house more Bombes and train the increasing number of Wrens needed to operate the machines.

Hut 4
Used for decrypting Enigma messages sent over from Hut 8, providing crucial daily intelligence in the battles between German U-boats and Allied convoys. The Double Cross Deception, codenamed Operation Fortitude South, was made possible by messages processed in Hut 4 in the lead-up to D-Day.

The mansion
Headquarters and recreational; housed senior staff's offices. Originally held the telephone exchange and teleprinter rooms, later moved to a blast-proof hut. This Victorian country house also had a dining room, library, billiard room and ballroom.

D-block
This housed Hut 6, which decrypted daily settings of the German Army and Air Force Enigma. Hut 3 was also in this block, and once Hut 6 had decrypted the messages, Hut 3 received them for translation and analysis, making often-unintelligible German military language read like a credible report. The block also housed Hut 8, which was used for naval decryption and was first headed by Turing.

Blocks A & B
More permanent buildings were needed as Bletchley personnel outgrew the wooden huts. Block A became the Naval Section's decoding centre. Hut 4 moved to Block B in 1942. The Naval Enigma Section now concentrated on breaking into the four-rotor Enigma. Ralph Tester's section, the Testery, was also housed here to break into Lorenz, before moving into Block F.

Hut 12
Originally an annexe to Hut 3, it later became part of Hut 4. Later it housed cryptanalyst Nigel de Grey and his Intelligence Exchange section. In April 1943 Hut 12 became the Education Hut, holding music concerts.

Block C
A huge clerical index was created by punching onto cards using Hollerith machines. Clerical staff built up a cross-referencing system to help the codebreakers, detailing names of personnel, locations and units. Each week, up to two million cards were used; they were stored in thousands of brown cardboard boxes. Each card was photographed and sent to the Bodleian Library in Oxford as a back-up.

The stable block
The garages housed the military vehicles, ambulances and carrier pigeons; three linked cottages became staff accommodation; the former fruit store became Turing and Knox's 'think-tank' room, known as 'the bungalow.'

What the senior staff's offices are believed to have looked like

The British used Typex cipher machines from 1937

The codebreaking mechanism was industrialised by the Bombe machine, invented by Alan Turing and Gordon Welchman in response to the need to speed up the process of running through all the possible Enigma wheel configurations. Operated by Wrens, the work was hot, smelly and noisy, but it was invaluable. By 1942, Bletchley's success had reached North Africa, where intelligence enabled the Royal Navy to cut Rommel's supply lines and keep General Montgomery informed of his every move. Early that year, however, the Germans introduced a more complex Enigma machine with an extra rotor. This caused a major information blackout and proved to be one of the greatest challenges to the codebreakers at Bletchley. However, by the end of 1942, the codebreakers had cracked that one too, thanks to the bravery of the seamen Fasson and Grazier who captured vital Enigma keys and books from the sinking U-559. From now on, Bletchley was able to read 'Shark'.

However, it was the breaking of the German's strategic ciphers that gave Bletchley arguably its greatest success. Initially, manual efforts enabled the cracking of these ciphers, used by Hitler to communicate with Berlin and his commanders in the field. Professor Max Newman realised a new type of machine was needed to keep up with the increasing volume of intercepts being received. With the help of a brilliant young General Post Office (GPO) engineer, Tommy Flowers, such a machine was designed and constructed. This became known as Colossus: the world's first semi-programmable electronic computer and it became essential to the planning by Allied forces for the invasion of Europe and operation D-Day.

Such successes were hoped for at that first 'shooting party' at the mansion in 1938, but, certainly in the beginning, there were many - even within the government itself - who doubted the impact codebreakers could make to the strategic planning of the war. Of these codebreakers, perhaps the most famous known today is Alan Turing. He may have looked and even acted like a true eccentric, but he possessed one of the finest brains of his generation, and his unique ideas for a 'Universal Turing Machine' undoubtedly laid the groundwork not only for the development of the electronic machines built inside Bletchley as the War progressed, but also for the concept of the computer age. Even in a setting such as Bletchley that was filled with great minds he stood out, leading the historian and wartime codebreaker Asa Briggs to comment, "You needed exceptional talent, you needed genius at Bletchley and Turing's was that genius."

Of all his colleagues and codebreakers at Bletchley, his work with Tommy Flowers may have excited Turing the most. They first met in 1939, when the talented young GPO engineer was first introduced to the Enigma secret. Both men were enthusiastic, experts in their fields and respected each other from the outset. Turing would sometimes visit Flowers at his laboratory workshop in Dollis Hill, where they first discussed the idea of building a machine that could decrypt Enigma by using electromagnets. While this would prove to be beyond the scope of the technology then available, Turing's blueprints and vision for such a machine stayed with Flowers and later resulted in Colossus.

OLIVER LAWN
British, 1919-2012

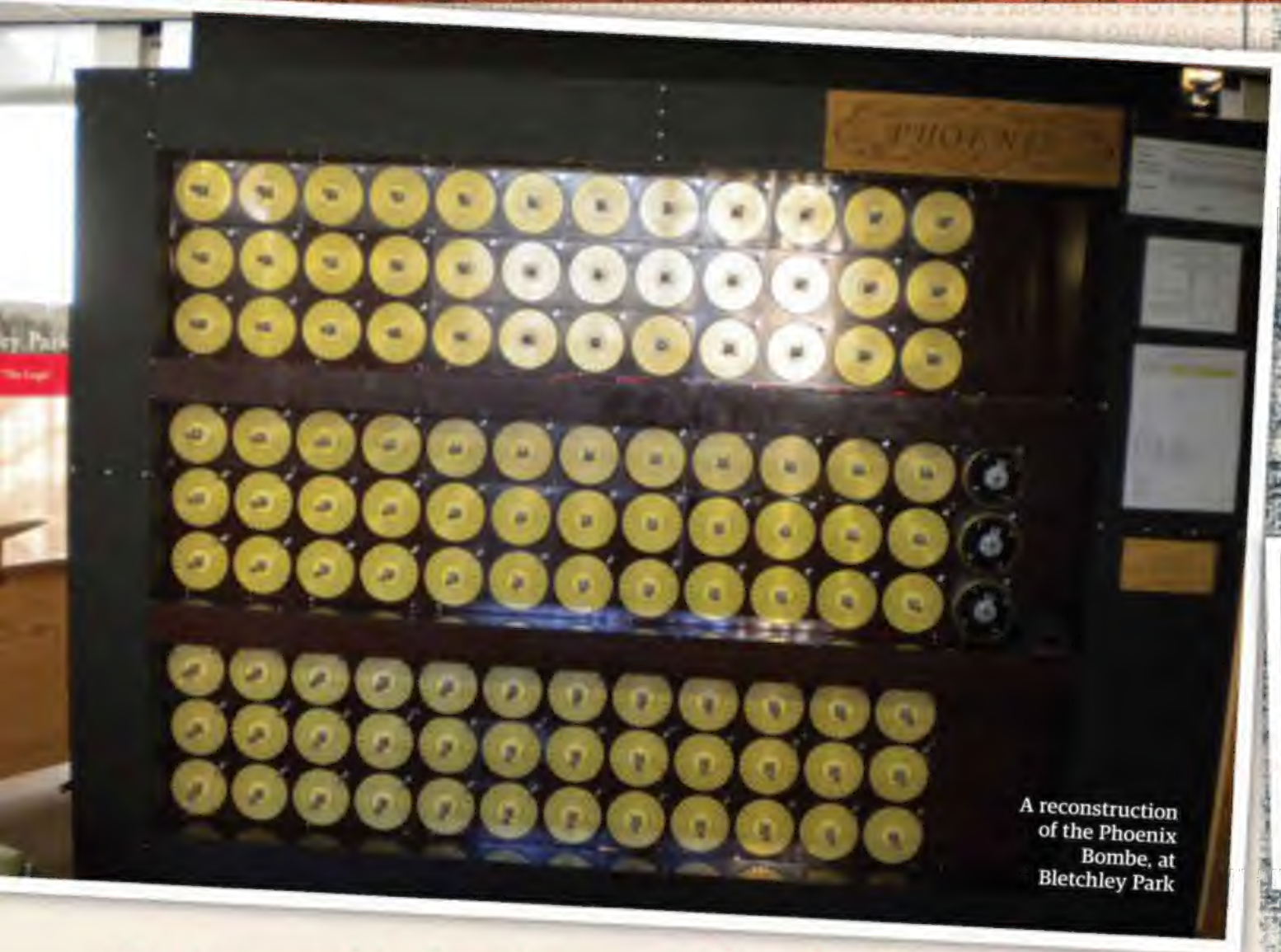
Brief Bio

A mathematician and cryptanalyst, Lawn was recruited from Jesus College, Cambridge in July 1940 by Welchman to work on German Army and Air Force Enigma. Working in Hut 6 and then in Block D, he contributed to the design of the Bombes (high speed, four wheel) in 1943. In January 1944 he made the first break into new Enigma 'Uncle D' - a German modification of the three-rotor Army and Air Force Enigma with new reflector wheel and pluggable wiring.

Churchill's golden geese

The British PM was one of Bletchley Park's biggest supporters

Daily boxes of high-level decrypts were sent to Churchill's office in locked boxes, the key to which he carried on his personal key ring. Only a select few in the Foreign Office and the military knew where they had come from, and not all of those shared Churchill's faith in Bletchley Park. During his visit in September 1941 he inspected the machines and huts, meeting senior codebreakers. Afterward, he gathered them outside Hut 6 for a short speech, in which he famously described them as his "geese that lay the golden egg - and never cackled." Recognising Churchill's support and respect, Bletchley sent him a letter asking for more staff. The prime minister's response was swift and decisive: "Make sure they have all they want on extreme priority and report to me that this has been done. Action this day."



A reconstruction of the Phoenix Bombe, at Bletchley Park

Bletchley's three greatest successes

The code-breaking centre's greatest achievements

"Turing would often be seen riding his bicycle around the Bletchley countryside, dressed in full gas mask to avoid the pollen that set off his hay fever"

Behind this genius was a troubled man, though. The former Cambridge student could be awkward socially and was a homosexual in an age when this was not only frowned upon, but actually illegal. He proposed to a colleague at Bletchley, Joan Clarke, who accepted, but he then recanted the offer and told her of his sexual orientation. Turing became something of an all-purpose consultant for the growing operation and crossed the Atlantic in November 1942, for highest-level liaison not only on the desperate U-boat Enigma crisis, but on the electronic enciphering of speech signals between Roosevelt and Churchill. His genius and contribution to the war effort was never properly acknowledged in his lifetime, though, and in 1952 he faced criminal charges after he struck up a relationship with another man, and was placed on hormonal treatment designed to reduce libido. In 1954, at the age of 42, Turing was found dead in his home in Manchester, having apparently committed suicide by cyanide poisoning.

Alan Turing devised a number of ways for breaking ciphers

Today, Turing is rightly celebrated for his many and varied achievements, and a bust of his head sits beside an exhibition of some of his personal effects. In 2009, Prime Minister Gordon Brown apologised on behalf of the government and the nation for Turing's prosecution, and publicly acknowledged the debt of gratitude owed to him by the Allies. The nation and the world's gratitude should be directed at Turing and those he worked with, all of whom passed through Bletchley's nondescript railway station. That station saw so much: the girl who joined the Wrens for the dashing uniform and a chance to serve at sea, who then found herself posted to a place just about as far from the sea as it was possible to get in England. The young man in the middle of his mathematics degree and a renowned chess champion, invited to put aside his studies for the duration, and the secretary, eager to 'do her bit', who applied for a clerical position in London but was found to be fluent in German and instead surprisingly given a train ticket to a small town called Bletchley.

They were ordinary men and women, some barely out of school, whose unique talents and skills were put to use in an extraordinary way. They all came willingly, if a little unknowingly - often via a small, anonymous house in Baker Street, where they signed the Official Secrets Act - to this seemingly insignificant Buckinghamshire town. As they stepped off those trains, they would have had no idea what amazing achievements they would become part of, even if they would never see recognition for it in their lifetime; nor could they have known the legacy they would help bestow on the nation. But come they did: first slowly, in their hundreds, then more and more as London experienced the horrors of the Blitz, and Dunkirk, and D-Day, until by 1945 there were about 10,000 people working at the Park. Bletchley is where their story begins, a story that can now be fully told and rightfully celebrated.

01 Cracking Lorenz

Although the 'Y' Stations were intercepting the German cipher machine Lorenz messages in early-1940, they had no idea how the machine was encrypting them. John Tiltman spotted an operator's repetition with abbreviations in August 1941 and used these small inconsistencies to crack the code. Bill Tutte used mathematical analysis to work out how the Lorenz machine worked without even seeing one and by 1942 Lorenz messages were being deciphered. Complications to the Lorenz design in 1943 led Max Newman and his team to need to design an entirely new electronic machine that would break Lorenz; the Colossus.

02 The invention of Colossus

Tommy Flowers, a brilliant GPO engineer, built Newman's design and created the world's first electronic semi-programmable computer in December 1943. By the end of the war, the ten Colossus machines in use were ordered to be dismantled, along with all records but only six were. It had taken weeks to break Lorenz with mathematical calculations: Colossus could do this in hours, reading the paper tape at 5,000 characters a second and sending the tape travelling in the wheels at 48 kilometres (30 miles) per hour.

03 D-Day

Without Bletchley, D-Day may well have had a different outcome. In June 1944, Colossus helped to fool German High Command of Allied plans. As well as providing information on German positions, the breaking of ciphers sent by the German Secret Intelligence Service allowed the Allies to confuse Hitler over where they would land; Hitler decided to divert his troops away from the very beaches the Allies had chosen in Normandy. Bletchley was able to read messages between Garbo (a network of 27 fictitious spies) and the Abwehr, showing Hitler had fallen for the deception.

© Alamy; Getty; Edward Crooks

THE ULTIMATE RICH LIST

THE 10 WEALTHIEST PEOPLE OF ALL TIME

From kings to dictators and entrepreneurs, we count down the ten most successful players in the risky game of wealth

Written by Frances White

Trading goods can be traced back as far as prehistoric times, when items like animal skins and weapons were exchanged between early humans. This form of bartering was developed further by the Chinese in 1100 BCE, when they moved from using actual tools and weapons as a medium of exchange to using miniature replicas of the same tools cast in bronze. However, the small pointy objects were awkward to carry around, so instead they were rounded down into a small, convenient circular shape and thus the very first coins were created. Paper money followed in 600 BCE and even bore an inscription, a common practice today, that read quite bluntly; 'All counterfeiters will be decapitated.' Notes found their way across to Europe by the year 1600, where they served as borrowers notes for the owner to carry around and exchange for silver or gold coins.

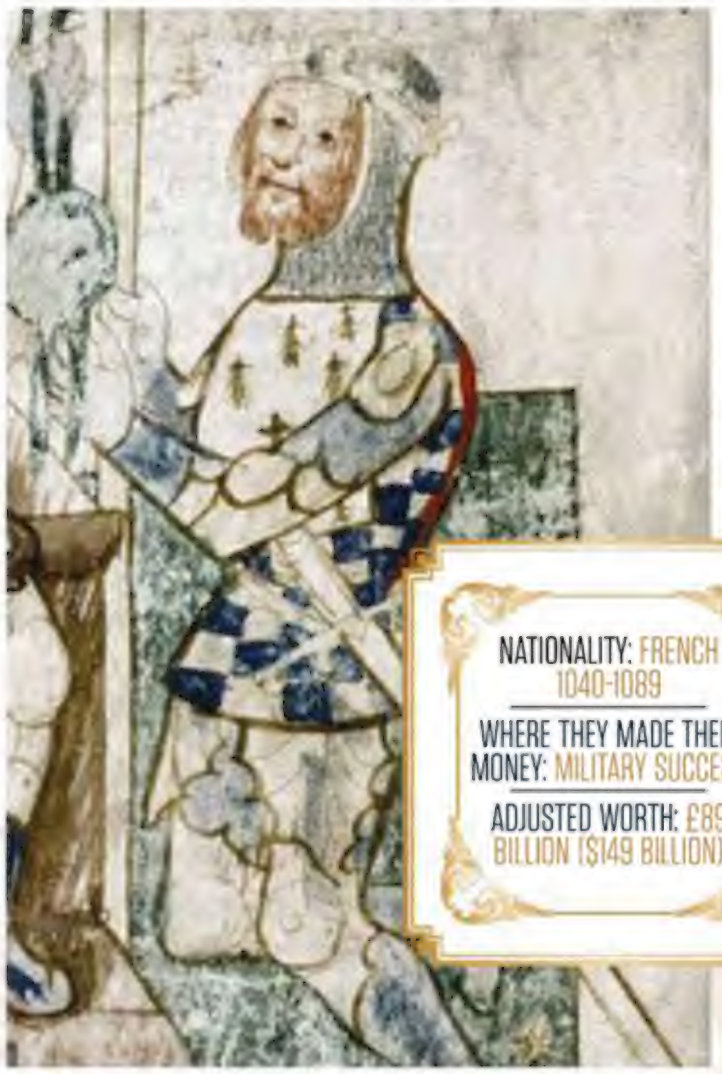
Although it has no real worth except the value placed on it by society, the pursuit of money has been an undeniable driving force throughout the history of mankind. Money has launched ships, driven families' apart and crowned kings. The path to riches has led many to ruin, some to their death, and a rare few to ultimate power. Depending on who holds it, it has the power to save lives or to devastate millions. On our list we have adjusted figures for inflation, to try and give a wider reflection of wealth throughout time rather than just 20th and 21st-century billionaires. From those who were born into vast fortunes, to those who worked their way up from poverty, from lofty kings to crusading warriors to vicious dictators, we count down the ten wealthiest people in the history of the world.

10 ALAN RUFUS

The hard-fought fortune

This little-known French immigrant played a key role in the Norman conquest of England and benefited greatly from it. A companion of William the Conqueror, Rufus was given the nickname Alan the Red due to his flaming red hair. Rufus was already in pretty good standing before the conquest - owning some land in the capital of Normandy and the title Lord of Richemont. Rufus travelled with his cousin William to England and took part in the 1066 Battle of Hastings as commander of the Brenton forces. The aid of his forces helped William defeat King Harold.

The conquering king rewarded Rufus' aid with 250,000 acres (1,010 square kilometres) of land in England, much of which had previously belonged to King Harold's wife Edith. As the money flooded in, Rufus commissioned the building of Richmond Castle in 1071, which he used as his own private lodgings. With so much land under his control, by 1086 Rufus was one of the most powerful and wealthy men in the whole of England, so much so that the *Domesday Book* features 1,017 mentions of him as lord or tenant-in chief of various properties. The wealthy lord also had a hand in developing the wool, salt and lead trade in Boston, Lincolnshire, as well as building a host of castles, abbeys and manor houses all across England.

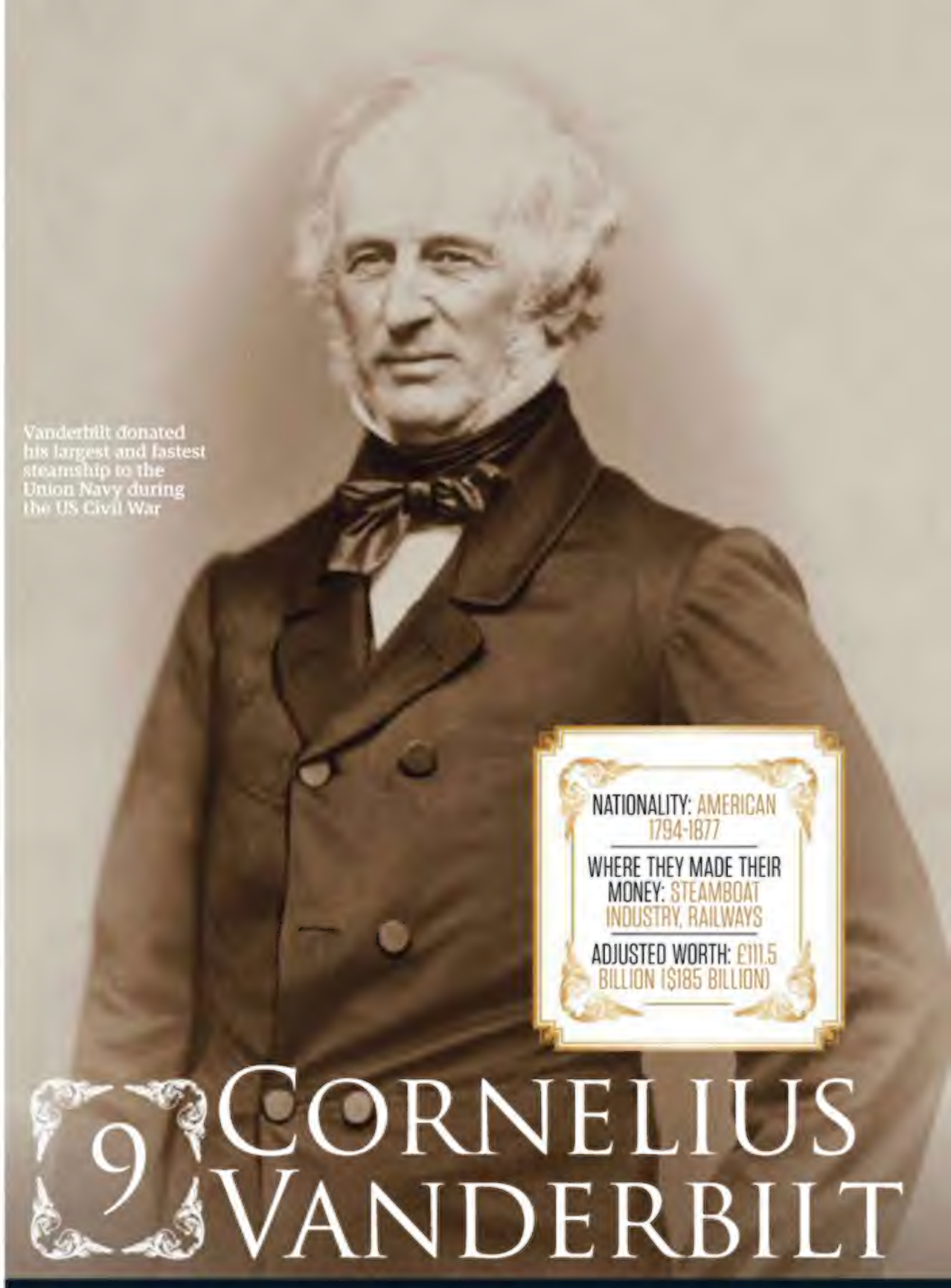


NATIONALITY: FRENCH
1040-1089

WHERE THEY MADE THEIR MONEY: MILITARY SUCCESS

ADJUSTED WORTH: £89 BILLION ($149 BILLION)

Rufus founded the famous Benedictine St Mary's Abbey with King William II



Vanderbilt donated his largest and fastest steamship to the Union Navy during the US Civil War

NATIONALITY: AMERICAN
1794-1877

WHERE THEY MADE THEIR MONEY: STEAMBOAT INDUSTRY, RAILWAYS

ADJUSTED WORTH: £111.5 BILLION ($185 BILLION)

9 CORNELIUS VANDERBILT

Master of the sea and rails

Born into poverty, Vanderbilt quit school at 11 years old to work with his illiterate father as a seaman. He later claimed: "If I had learned education, I would not have had time to learn anything else." This risky move sparked an interest in the sea that was to shape his life and earn his fortune. He started his own business aged 16, ferrying passengers between Staten Island and Manhattan, earning him the nickname 'The Commodore'.

As steamboat travel rose in popularity, Vanderbilt sold his vessels and found a job as a steamboat operator. By the time he was 30, he had established his own steamboat business. Vanderbilt was so successful that his rivals paid him to leave the Hudson River where he operated, calling him a 'robber baron.' When two of his rivals conspired against him and took over the stock of his business, he wrote them a chilling letter reading simply: "Gentlemen: you have undertaken to cheat me. I won't sue you, for the law is too slow. I'll ruin you. Yours truly, Cornelius Vanderbilt." In two years, Vanderbilt's competing business forced his cheating rivals to close up shop. By the mid-1840s his steamboat business was worth several million dollars, a fortune in that time.

Moving with the times, Vanderbilt purchased railroads in New York as the popularity of rail travel grew. This proved his most profitable endeavour, earning him $25 million in just five years. As his profits grew, the Commodore became plagued by the pressure his own fortune had placed upon him, especially the subject of inheritance, with ten children vying for a cut. He finally decided to give the majority of his vast wealth to his son William, who was the only child he deemed strong willed enough to ensure his empire continued to expand after his death. William Vanderbilt went on to build on his inherited riches, expanding the family fortune with the business cunning inherited from his father.

8 Henry Ford

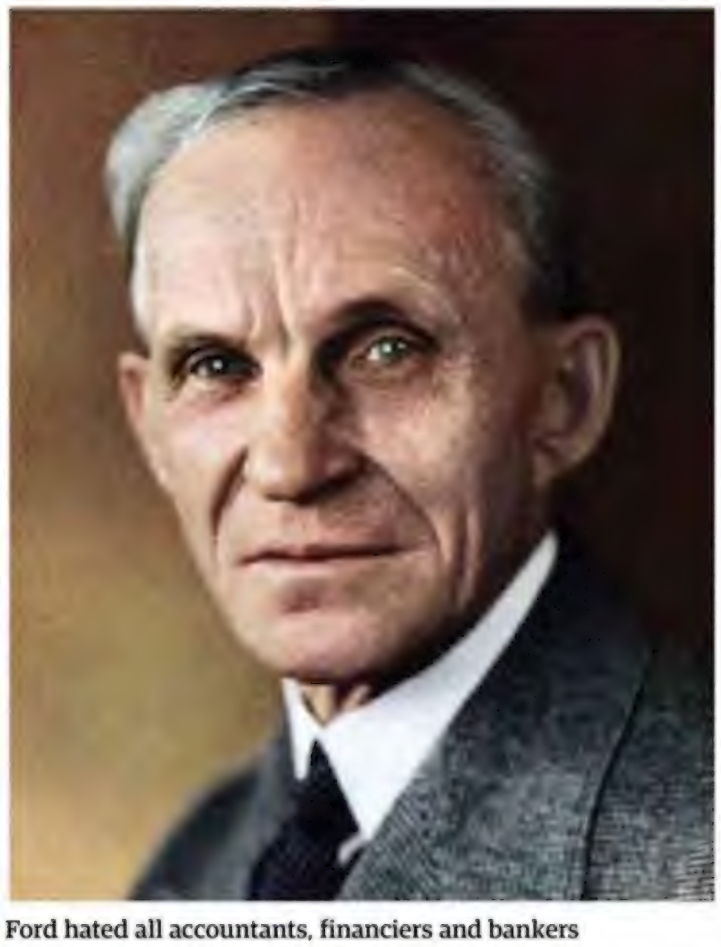
The perilous road to success

Born on the family farm in Wayne County, Michigan, everything was set up for the young Henry Ford to follow in his father's farming footsteps, but his talents lay elsewhere. Ford demonstrated his entrepreneurial qualities early in life by teaching himself to fix watches and organising a team of boys to build primitive water wheels and steam engines.

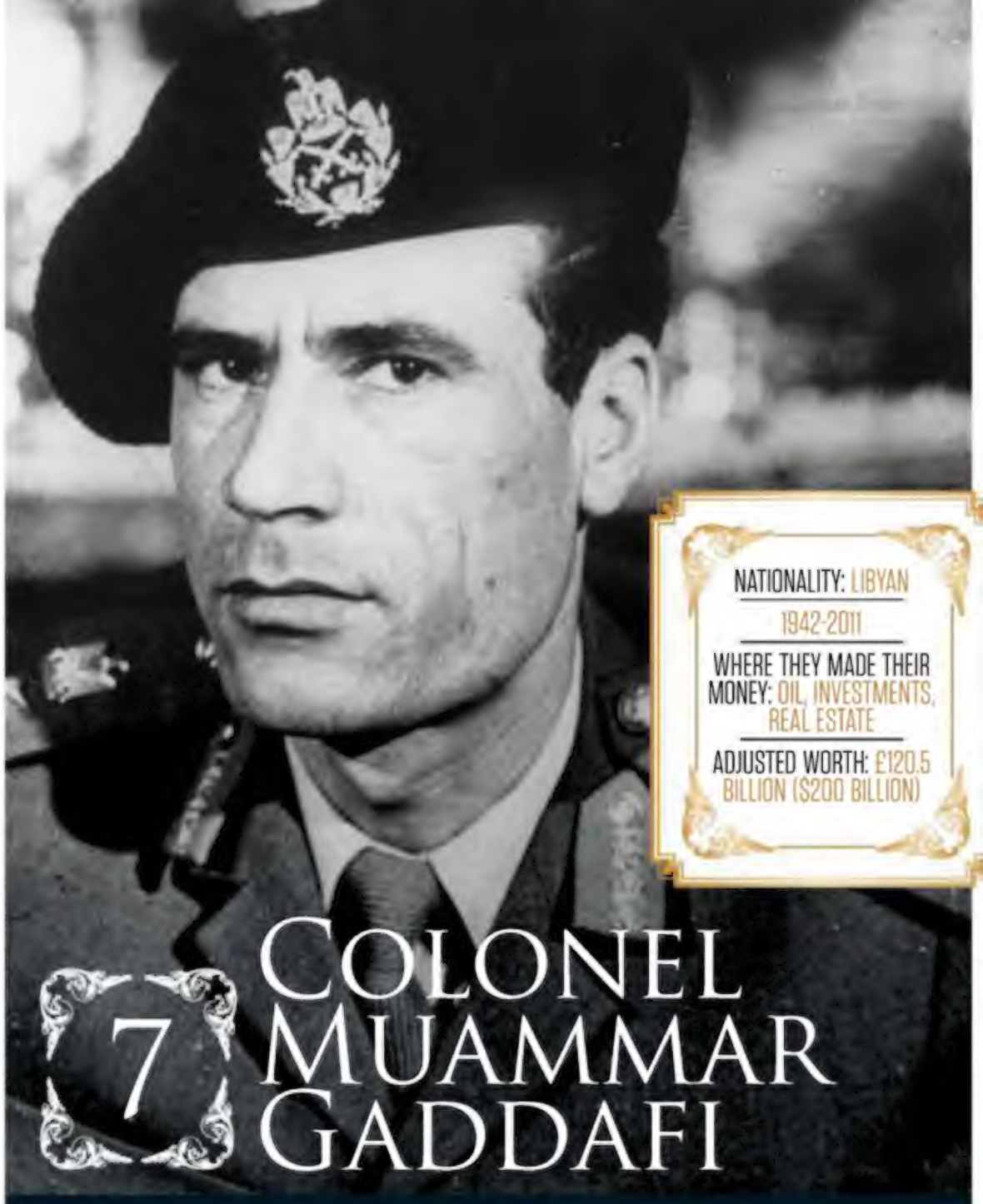
Henry left home at 16 and became a machine apprentice; over the next few years he moved between jobs and began experimenting with gasoline engines while working at Thomas Edison's company. Aged 36 he made his first foray into business with the Detroit Automobile Company, but the company went bankrupt, as did a second.

NATIONALITY: AMERICAN
1863 -1947
WHERE THEY MADE THEIR MONEY: MOTORCAR INDUSTRY
ADJUSTED WORTH: £119.9 BILLION ($199 BILLION)

Ford tried again and on 16 June 1903 he founded his third company - Ford Motor Company, and struck gold. With the creation of the Model T and an ingenious use of assembly lines, Ford produced the first affordable car for the masses. His huge success meant he could afford the most talented workers and the company turned over 100 per cent profits, but Ford's real legacy is playing a major part in aiding USA's early economy to grow to the juggernaut it is today.



Ford hated all accountants, financiers and bankers



NATIONALITY: LIBYAN
1942-2011
WHERE THEY MADE THEIR MONEY: OIL, INVESTMENTS, REAL ESTATE
ADJUSTED WORTH: £120.5 BILLION ($200 BILLION)

7 Colonel Muammar Gaddafi

The mad dog of the Middle East

Gaddafi joined the Libyan Royal Military Academy as a young man and rose through the ranks, playing a key role in a revolutionary movement of officers determined to overthrow King Idris. After a bloodless coup, the group seized power in 1969 and Gaddafi was named chairman of the Revolutionary Command Council and commander in chief of the armed forces.

The Libyan dictator's extreme policies divided opinions, but one of the most shocking revelations concerning Gaddafi emerged after his death. Investigations following his assassination revealed that Gaddafi had secretly hidden approximately £120.5 billion ($200 billion) in bank accounts all around the world, equating to about £18,000 ($30,000) for every Libyan citizen, a third of whom live in extreme poverty.

At a time when his country's hospitals, schools and institutions struggled to survive, the 'Brotherly leader' was bleeding the country's oil supplies dry. With personal control over huge oil reserves, Gaddafi invested his wealth in banks all over the world. Although the money was hidden in the name of government institutions, Gaddafi and his family were free to withdraw any amount at any time. Great stashes of this hidden gold were seized all around the world, with £23 billion ($37 billion) discovered in the United States alone. Gaddafi wasn't afraid to splash the country's cash and owned luxury homes all over the globe, with all the opulence his nation never tasted.

How we worked this out

■ It should be stated that there is no exact science to working out a definite list of the wealthiest human beings in history, and experts have argued over the issue for years. For our list we have focused on individuals, so families with vast wealth, such as the Rothschilds, were dismissed. Monarchy and rulers were included when the individuals in question had instant personal access to and control of these vast fortunes. The list uses the rate of inflation to adjust historic wealth, and ancient fortunes were included only when there is enough reliable evidence to back up the claim.

6 William the Conqueror

The bastard that plundered the land

William did not speak any English and struggled to master the language even after he had been crowned king

NATIONALITY: FRENCH
1028-1087
WHERE THEY MADE THEIR MONEY: LAND
ADJUSTED WORTH: £138.3 BILLION ($229.5 BILLION)

William the Conqueror was thrown headfirst into conflict from an early age. Becoming Duke of Normandy at just eight years old, violence and corruption swept through the country and he managed to survive only with the help of King Henry I. Nicknamed 'The Bastard' due to his illegitimate birth, William was knighted in his teens and by 1064 he had already conquered Brittany and Maine.

After Edward the Confessor died without heirs the throne of England was claimed by his brother-in-law Harold Godwin. Displeased, William led an invasion of England to stake his claim to the throne and defeated Harold and his forces at the Battle of Hastings, being crowned king on Christmas Day.

What followed was a series of land grabs all over England as William claimed English land as his own personal property. This, combined with the wealth naturally obtained through conquering other kingdoms, meant that when he died on 9 September 1087 he left the equivalent of £138.3 billion ($229.5 billion) to his sons.

5 Mir Osman Ali Khan

The diamond ruler

NATIONALITY: INDIAN
1886-1967
WHERE THEY MADE THEIR MONEY: MINING, INHERITED, MONARCHY
ADJUSTED WORTH: £142.2 BILLION ($236 BILLION)

Crowned on 18 September 1911, Mir Osman Ali Khan was the Nizam, or ruler, of the state of Hyderabad, a princely state in India. Much of his wealth was acquired from mining diamonds in the late-19th century.

Although viewed as a benevolent ruler who encouraged the growth of education, science, railroads and airways, he was also known for his eccentricity. Despite his wealth, the Nizam displayed many penny-pinching habits, such as knitting his own socks and smoking cheap cigarettes.

In stark contrast to this austerity, he splashed his cash on a £50 million ($82.9 million) diamond the size of an ostrich egg, which he used as a paperweight, a 1.6-kilometre (one-mile)-long wardrobe full of silks and fine muslins, and filled an underground vault with broken trucks and lorries, all filled with gold coins and precious gems. The Nizam's biggest vice was undoubtedly the opposite sex, though, and he had a reported 86 mistresses and at least 100 illegitimate sons. After his death, 470 of his descendants fought over £30 million ($49 million) of his money that was left in a London bank account.

The Nizam gifted Queen Elizabeth II with a magnificent diamond necklace

Three Honourable Mentions

Marcus Licinius Crassus

NATIONALITY: ROMAN
115 BCE – 53 BCE

A leading figure in Roman politics, Crassus amassed his vast fortune through inheritance, the slave trade, property and executing criminals and innocent people to obtain their wealth. It is reported that Crassus' fortune amassed 170 million sesterces, equal to the yearly budget of the entire Roman treasury. While some believe him to be the wealthiest person in history, modern knowledge of Ancient Roman monetary values have cast doubt on this claim.

King Solomon

NATIONALITY: ISRAELI
10TH CENTURY BCE

Knowledge of King Solomon's fortune comes from the Hebrew Bible where it is written that he held a fortune that dwarfed any person that lived before him – essentially making him the wealthiest person alive at that time. It is believed this wealth was obtained through heavy taxes, trading and tributes. However, due to conflicting historical evidence, it is impossible to attest just how vast Solomon's fortune would be today.

Bill Gates

NATIONALITY: AMERICAN
1955-PRESENT

Simon Davis/DFID

The business magnate and former chairman of Microsoft often tops the list of wealthiest living people, but his current net worth of £47.7 billion ($79.2 billion) isn't enough to place him in our all-time top ten. Gates struck gold with his software company Microsoft, which released its first retail version of Microsoft Windows in 1985. Gates has donated vast amounts of his fortune to charity, which has decreased his wealth, but he still remains fabulously wealthy.

4 NICHOLAS II

The cursed inheritance

When Nicholas II ascended the throne in 1894 it was to an Imperial Russia with immense power and worldwide influence. However, the inexperienced and ill-prepared new tsar confided that the role was not one he personally desired, "I am not prepared to be a tsar. I never wanted to become one. I know nothing of the business of ruling." His disastrous reign would prove his doubts to be well founded.

Russia was in the grips of a dynamic period of change, and when workers demonstrated for better working conditions and to establish a popular assembly, troops opened fire and killed over a thousand people, earning the reluctant ruler the nickname 'Bloody Nicholas.' As outraged citizens held strikes all over the country, Nicholas became preoccupied with the outbreak of the First World War, appointing himself as commander-in-chief, despite warnings of his ministers that he should leave operations to the professionals.

NATIONALITY: RUSSIAN

1868-1918

WHERE THEY MADE THEIR MONEY: INHERITANCE, MONARCHY

ADJUSTED WORTH: £180.8 BILLION ($300 BILLION)

The war went very badly for Russia in and in the spring of 1917 riots and uproar finally forced the tsar to abdicate the throne. Just over a year later, on 17 July 1918, Nicholas II and his entire family were murdered by the Bolsheviks, led by Vladimir Lenin, putting an end to the Russian monarchy for good.

Nicholas gained his vast fortunes much in the way he earned his title and power: he inherited them. His massive wealth was held in banks in many countries all around the world, and taking into account all the inherited gold, jewels, land, art and palaces owned by the ill-fated tsar, the world may never know the exact amount of the last-ever tsar's fortune.

Nicholas II's reign got off to a foul start when thousands of people were crushed to death on the eve of his coronation

OUR TOP TEN LIST AT A GLANCE

MOST REPRESENTED COUNTRY ON THE LIST

USA

SELF-MADE MAN VS INHERITED WEALTH

RISKIEST MONEY MADE

Ford

STARTING A THIRD BUSINESS AFTER TWO FAILURES

MOST UNETHICAL ACTION

GADDAFI

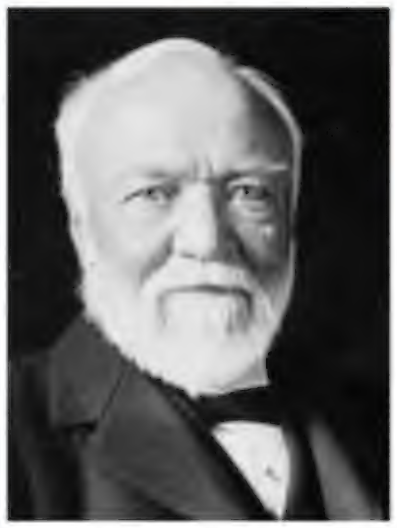
SECRETLY STOWING BILLIONS AS HIS CITIZENS STARVED

BEST-REPRESENTED TIME PERIOD

19th CENTURY

3 Andrew Carnegie

The rags to riches story



Carnegie paid another man to serve in his stead during the American Civil War

Carnegie began his life in very modest circumstances; born in Dunfermline, Scotland, his family descended into poverty as the new machines of the Industrial Revolution claimed their jobs as hand loom weavers. As Carnegie watched his parents struggle, a new resolve was brewing within him, "It was burnt into my heart then that my father had to beg for work. And then and there came the resolve that I would cure that when I got to be a man."

Desperate for money, his family travelled to America. There his father found work in a cotton factory where his son was also employed as a bobbin boy for 72 pence a week. Carnegie went on to become a messenger boy in the telegraph office, seizing every opportunity presented to him. His eager attitude impressed Thomas A Scott who hired him as his private secretary at the Pennsylvania Railroad for £21 ($35) a month.

Carnegie's dedication saw him quickly ascend the ranks until he replaced Scott as superintendent of the Pittsburgh Division. As the American Civil War of 1861 to 1865 tore across the country, Carnegie watched the iron industry flourish and made the bold move to leave his job and pursue his fortune in the lucrative field. With the Keystone Bridge Company he replaced wooden bridges with iron ones and made £30,000 in a year. His wealth continued to grow as he embraced innovations in steel and soon his company was producing more steel than Great Britain.

By the time he was 64 years old young challengers were emerging and Carnegie sold his steel business to JP Morgan for $480 million; a deal that made him the richest man in the world. Carnegie spent the remainder of his days living by the phrase "the man who dies rich dies disgraced" and gave away $350 million of his riches, building over 2,500 public libraries and funding several universities.

NATIONALITY: SCOTTISH AMERICAN

1835-1919

WHERE THEY MADE THEIR MONEY: STEEL INDUSTRY

ADJUSTED WORTH: £186.8 BILLION ($310 BILLION)

Money can't buy you taste

When successful businesswoman and widowed wife of the 'king of real estate' Harry Helmsley, Leona Helmsley died in 2007, the contents of her will received worldwide attention. The fabulously wealthy Helmsley had left £7 million ($12 million) to her Maltese dog, Trouble. Upon Helmsley's sanity being questioned, the amount was reduced to £1.2 million ($2 million) which provided the pup with a £60,000 ($100,000)-a-year security team, £4800 ($8000) a year for grooming and £720 ($1200)-a-year worth of premium dog food.

2 John D Rockefeller

The black gold magnate

Rockefeller had a head for business from a young age and as a boy made money through a series of schemes, including raising turkeys and selling candy. Leaving school at 16, he was employed as an office clerk in a commission firm. He viewed the first day of his employment, 26 September, so important that later in life he would celebrate this 'job day' every year.

Four years later, in 1859, Rockefeller and a partner created their own commission firm. The very same year USA's first oil well was drilled and the young entrepreneur made his entrance into the oil industry by investing in a Cleveland refinery. As the profits flooded in, he took full control of the refinery and established the Standard Oil Company of Ohio.

The powerful company quickly engulfed the competition and came to control 90 per cent of North America's refineries and pipelines. But Rockefeller's massive wealth attracted a slew of media criticism, accusing him of using undermining tactics like spying, bribing and threatening his rivals, and in 1911 the Supreme Court dismantled the company for violation of antitrust laws. Rockefeller dedicated his final years giving away his vast fortune, and eventually gave away more than half a billion dollars.

John D Rockefeller's father was a con man known as 'Doc Rockefeller'

NATIONALITY: AMERICAN

1839-1937

WHERE THEY MADE THEIR MONEY: OIL

NET WORTH: £202.5 BILLION ($336 MILLION)

The world's biggest philanthropist

With a net worth of £35.2 billion ($58.5 billion), Warren Buffet is one of the world's wealthiest people, and a dedicated philanthropist. Making most of his money from successful investments and serving as CEO of the holding company Berkshire Hathaway, Buffet has pledged to give away 99 percent of his entire wealth to good causes. Buffet has already decided that his children will not inherit the majority of his wealth upon his death, saying: "I want to give my kids just enough so that they would feel that they could do anything, but not so much that they would feel like doing nothing."

Mansa Musa I

The golden lion of Mali

1

Mansa Musa was not born directly into the line of kings, but instead came to sit upon the throne through chance. When his predecessor, Abubakari II, went on an exploration of the Atlantic Ocean, Musa was named his deputy to rule in his stead while he was gone. As fate would have it, Abubakari II never returned from his journey, so Musa became king.

Musa's immense wealth was a product of the salt and gold produced by the Empire of Mali during his reign. Stretching over two thousand miles from the Atlantic Ocean to Lake Chad, the kingdom supplied more than half of the entire world's supply of salt and gold, and gold is what flooded back into his kingdom.

NATIONALITY: MALIAN

1280s-1337

WHERE THEY MADE THEIR MONEY: SALT, GOLD, TRADE

ADJUSTED NET WORTH: £241.1 BILLION ($400 BILLION)

Mansa (which translates as 'king of kings') was not only an expert at demonstrating his wealth, he was also generous at giving it away - perhaps a little too generous. Musa freely gave great amounts of gold to any poor people he passed, as well as a large donation to every city he travelled through. Keen to make his mark on each place he visited, it is also said that every single Friday he would build a new mosque. Freely trading gold for souvenirs, Musa's lavish spending had a devastating effect on the economy of the places he visited. By suddenly introducing vast amounts of gold to society, the value of the metal drastically plummeted for the next decade, sending the prices of goods sky-high. Once Musa learned of the situation he borrowed as much gold as he could carry at high interest, meaning that for the first time in recorded history a single man controlled the price of gold in the Mediterranean region.

Musa's real legacy is arguably the large number of buildings he left behind. He built a huge number of mosques, madrasas, libraries and universities and many structures that still stand today, such as the great mosque in Timbuktu. Musa's pilgrimage and displays of wealth also attracted the attention of Europe to Mali, encouraging European cartographers to include Mali in their maps of the world; Musa literally put Mali on the map. However, the sudden attention on Mali was not such a good thing for Musa's heirs. The kingdom became ravaged by civil wars and invading conquerors, and in just two generations the greatest fortune the world has ever known was gone forever.

Anyone who greeted Mansa Musa was required to kneel down and scatter dust over themselves

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"He secured the patronage of the Spanish monarchs Ferdinand II of Aragon and Isabella I of Castile who agreed to fund his plans to explore the New World"

COLUMBUS
EXPLORER · ICON · MURDERER

Christopher Columbus was instrumental in defining the New World, but did he rule his new-found lands with a brutal and bloody iron fist?

Written by Dom Reseigh-Lincoln

The son of middle-class Genoan wool weavers, Christopher Columbus is not your usual child. Driven and incessantly inquisitive, the young boy is fascinated with the maps and charts the traders and seafarers bring to his coastal home in Italy. Something about those empty spaces on the intricately marked canvas calls to him, a fantastical need to fill those gaps and claim the glory such discoveries would surely bring. The unknown doesn't unsettle him, like it does many people of the time - in fact, it does the opposite: it captivates him. Seeing a rare tenacity in his eldest son, his father spends what money a wool weaver can spare and secures a place for Columbus at the University of Pavia. There he studies grammar, geography, geometry, astronomy, navigation and Latin – but for all his studies, the young Genoan finds his mind drifting to those blanks voids on the map. This hunger would define his life forever.

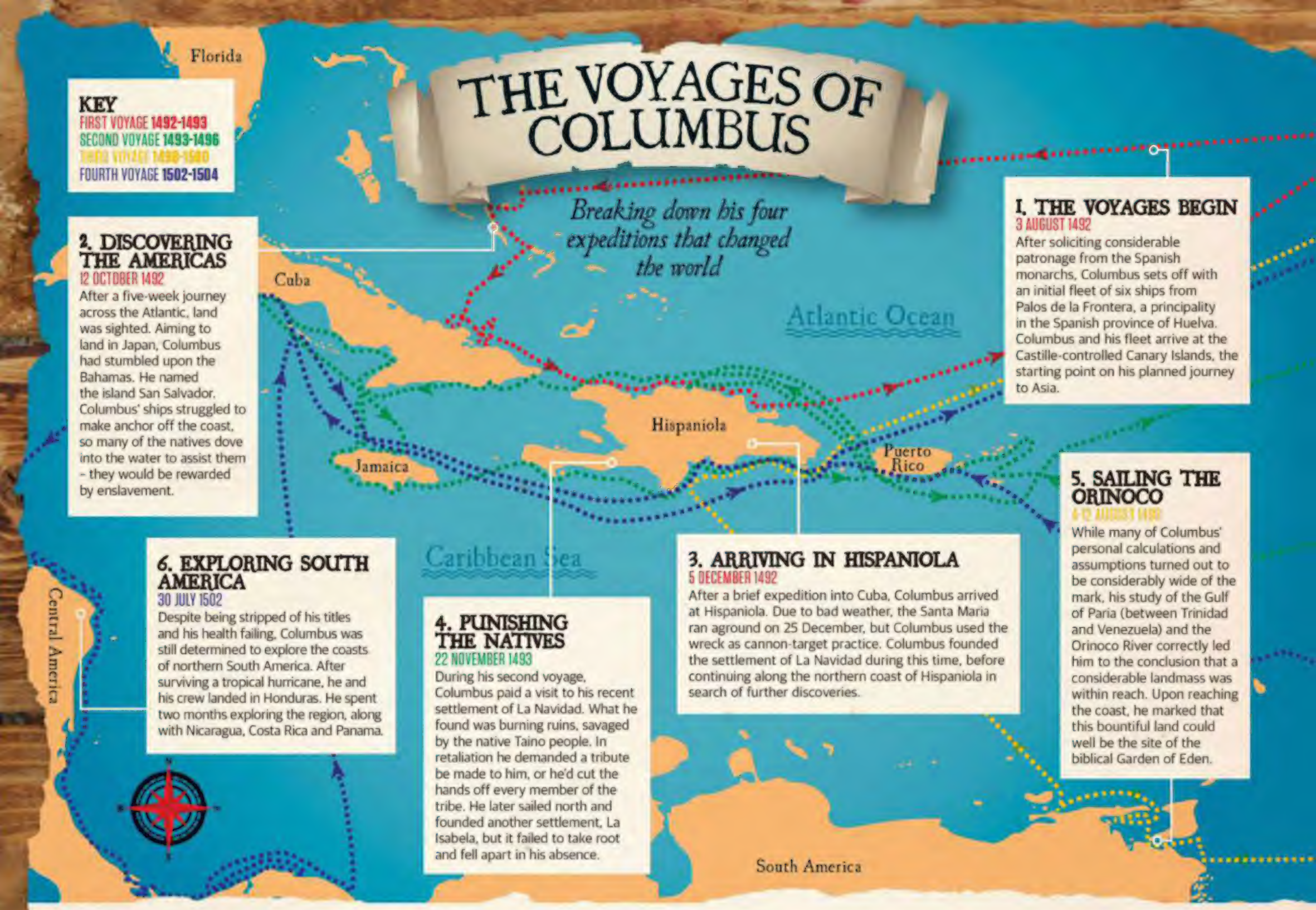
In 1470, Columbus gains an apprenticeship working as a business agent for three influential Genoan families. His learned background and tenacity in the face of adversity makes him a ferocious businessman and he's soon captaining ships that carve the ocean like blades. His work takes him far and wide across the civilised world: Lisbon, Bristol, Galway, West Africa and even settlements in Iceland become common ports of call. While deeply pious, Columbus steadily builds a reputation for ruthless determination. But for all his years of trade and commerce in these establishment lands, Columbus would always find his mind drifting to those incomplete maps he pored over as a child. The only thing standing between him and those fabled lands of untold riches was money. It was time to find a patron – an incredibly wealthy patron.

For many years, Europe held a distant yet lucrative trade relationship with the East. While under the rule of the once-rampant Mongol Empire, European traders travelled a relatively safe route of passage to China known as the Silk Road, but now that Constantinople had fallen to the Turks, the route was rife with piracy. The East was now too dangerous a path to take, even for the most hardened of captains. Columbus was searching for a new route to India and the riches of Asia and to achieve this his plan was simple: sail west across the Ocean Sea (the 15th and 16th-century name for the Atlantic Ocean).

Sailing west wasn't just a case of turning your ships about and sailing away from the Orient, though. Since a portion of the map remained undefined on Western charts, the view of scholars, geographers and seafarers was a skewed one. Theories that the Earth was a flat disc persisted among some, but it was more the misinterpretations and speculation involving the distances between Europe and Asia, as well as the actual size of the mysterious continents and islands that were rumoured to lie beyond the storm-ridden oceans. Even Columbus' own theories were wildly inaccurate, but his intensity and sheer persistence made him stand out from his peers. He eventually secured the patronage of the Spanish monarchs Ferdinand II of Aragon and Isabella I of Castile, who agree to fund his plans to explore the New World and claim it the name of a unified, Catholic Spain.

THE VOYAGES OF COLUMBUS

Breaking down his four expeditions that changed the world


KEY
FIRST VOYAGE 1492-1493
SECOND VOYAGE 1493-1496
THIRD VOYAGE 1498-1500
FOURTH VOYAGE 1502-1504
Florida
Cuba
Jamaica
Hispaniola
Puerto Rico
Atlantic Ocean
Caribbean Sea
Central America
South America
1. THE VOYAGES BEGIN
3 AUGUST 1492
After soliciting considerable patronage from the Spanish monarchs, Columbus sets off with an initial fleet of six ships from Palos de la Frontera, a principality in the Spanish province of Huelva. Columbus and his fleet arrive at the Castille-controlled Canary Islands, the starting point on his planned journey to Asia.
2. DISCOVERING THE AMERICAS
12 OCTOBER 1492
After a five-week journey across the Atlantic, land was sighted. Aiming to land in Japan, Columbus had stumbled upon the Bahamas. He named the island San Salvador. Columbus' ships struggled to make anchor off the coast, so many of the natives dove into the water to assist them - they would be rewarded by enslavement.
3. ARRIVING IN HISPANIOLA
5 DECEMBER 1492
After a brief expedition into Cuba, Columbus arrived at Hispaniola. Due to bad weather, the Santa Maria ran aground on 25 December, but Columbus used the wreck as cannon-target practice. Columbus founded the settlement of La Navidad during this time, before continuing along the northern coast of Hispaniola in search of further discoveries.
4. PUNISHING THE NATIVES
22 NOVEMBER 1493
During his second voyage, Columbus paid a visit to his recent settlement of La Navidad. What he found was burning ruins, savaged by the native Taino people. In retaliation he demanded a tribute be made to him, or he'd cut the hands off every member of the tribe. He later sailed north and founded another settlement, La Isabela, but it failed to take root and fell apart in his absence.
5. SAILING THE ORINOCO
6-12 AUGUST 1498
While many of Columbus' personal calculations and assumptions turned out to be considerably wide of the mark, his study of the Gulf of Paria (between Trinidad and Venezuela) and the Orinoco River correctly led him to the conclusion that a considerable landmass was within reach. Upon reaching the coast, he marked that this bountiful land could well be the site of the biblical Garden of Eden.
6. EXPLORING SOUTH AMERICA
30 JULY 1502
Despite being stripped of his titles and his health failing, Columbus was still determined to explore the coasts of northern South America. After surviving a tropical hurricane, he and his crew landed in Honduras. He spent two months exploring the region, along with Nicaragua, Costa Rica and Panama.

On the morning of 3 August 1492, with a contingent of three ships and two smaller caravels, Columbus sets sail from Palos de la Frontera. The swells are relatively calm and the ships carve a path toward the Canary Islands in a few days, before restocking supplies and setting sail for Japan. The three ships sail deeper into the unknown. Violent winds and angry swells buffet them across the waves, their intended course ripped apart by tropical storms these westbound seafarers have little experience with. By 12 October, morale on the ships is at a dangerously low - men have drowned in storms, masts have been broken by vicious gales and even a small mutiny breaks out. Columbus, sat within the confines of his cabin, stares at the maps before him. He knows their course has been broken, but it's the time at sea that troubles him the most. They should have set foot on new lands long before now. Time is running out.

Suddenly, out of nowhere, one of sailors above screams at the top of his voice: "Land! Land ahoy!" Columbus rushes from his desk, candles, papers and wine flying in his wake. The spray of the swaying oceans stings him in the face after so many hours in a stuffy cabin, but he's soon scrambling onto the poop deck, the prospect of land driving him forward. Telescope in hand, he squints and takes his first glimpse of a brand new world. Lush greenery and a pale-coloured beach can be seen in the distance, birds of a peculiar colour circling above the canopy. It's then that he sees them: dark-skinned men and women, most of them barely dressed at all, spears and bows clutched in their hands.

A few hours later, all three ships are anchored at a safe distance and the three crews are now safely on land. Columbus is standing upon Watling Island (which would later form part of the Bahamas). He names it San Salvador and claims it for the glory of Spain. Over the next few days, Columbus meets with the three main tribes of the island - the Taino, the Arawak and the Lucayan - and begins building a relationship that tells him a great deal about this new Eden. Only one other tribe, based on a distant island, is aggressive toward them, occasionally landing raiding parties to take slaves. In one of his journal entries, Columbus remarks: "I could conquer the whole of them with 50 men, and govern them as I please." Columbus views them less as people and more as another acquisition with which he can return to Spain. While this attitude may seem callous, it is a common one that will eventually drive and maintain the slave trade for hundreds of years to come. After a week or more on San Salvador, he begins searching the surrounding waters, eventually arriving on the northern coast of Cuba, before landing on the cost of Hispaniola on 5 December 1492.

Hispaniola is a much larger land mass than the first island he embarked on, and with a calm

A highly stylised depiction of Columbus' first landing in America in 1492

sea behind him and stories of a realm rich with gold and other treasures, Columbus is confident he's found the beginning of his own legacy. In a matter of weeks he establishes a settlement on the island, La Navidad, and on 25 December orders a specially chosen crew of his most trusted seafarers to take the Santa Maria and sail north and conduct more reconnaissance. Unfortunately, Columbus is drunk at the time he gives the orders, as is the crew he appoints. In a matter of a few hours, half the crew fall asleep and the boat crashes into the rocks.

On 13 January 1493, Columbus meets with the carique (the head chieftain of the Taino peoples) of Hispaniola, Guacanagari, who agrees to the explorer's request to leave 39 of his crew behind to populate the settlement. He leaves on the last exploratory part of his first voyage and arrives some days later on the Samana Peninsula, where he encounters the far less friendly Ciguayos tribe. The carique on the island refuses to grant Columbus leave to establish a settlement; battle soon ensues and two of the tribe's people are killed. As punishment, Columbus captures 30 of their people and sets sail for Spain – only seven of the captives survive the long trip back to Europe.

> "La Navidad has been razed to the ground, burned to a cinder by the Taino people that had been so accommodating the year before"

Upon returning to the court of the Spanish monarchs, Columbus becomes the talk of Europe with his journals, maps, fruits, spices, gold and native captives. His irrefutable proof of a new land between Europe and Asia now laid before them, Isabella and Ferdinand happily award Columbus the titles previously agreed, and he becomes the Admiral of the Open Sea and viceroy and governor of all the lands he discovers. In order to ensure the expansion of Hispaniola, Columbus sends his brother Bartolomeo along with a consignment of sailors, soldiers and tradesmen soon after.

On 24 September, Columbus sets out on his second major voyage. It's an expedition that takes a far more southerly route, taking in the other islands in the Bahamas, as well as a stopover in Jamaica. On 22 November, Columbus and his fleet of 17 ships turn their bows toward Hispaniola, the Genoan governor ready to see the plans he gave his brother back in Cadiz come to life. What he finds is a burning ruin. La Navidad has been razed, burned to a cinder by the Taino people that had been so accommodating the year before. He had brought civility to their darkened corner of the Earth. He had given them stability. He had given them the power of Christ.

LIFE ON THE WAVES

What was the reality of sailing the oceans in the 15th century?

Ship's surgeon

Life aboard a 150-tonne ship was fraught with dangers. Cannons could misfire, limbs could be broken by broken masts and flailing rigging, as well as the various diseases and ailments that could affect the crew. At the heart of all this was the ship's surgeon, whose role was to ensure a crew remained fit enough to fulfil their duties, however gruesome the treatment.

Boatswain

The boatswain was one of the most important members of a ship, and with that responsibility came its fair share of danger. A boatswain, usually the third or fourth mate, was in charge of maintaining the ship's deck and ensuring the sails and rigging remained in the best condition. In moments of emergency, such as a raging fire (a common occurrence due to power kegs overheating in hot, dry temperatures) and storms, a boatswain would be first on the scene.

Ordinary seaman

For all the master gunners and quartermasters, there was always need for seamen willing to do the hard graft that life at sea demanded. Known rather less affectionately to their fellow crew as 'swabbers', ordinary seamen found themselves doing the Santa Maria's worst jobs. Pumping and removing bilge (the stagnant water that collects in the lowest compartment of a ship), untangling knotted rigging and swabbing the decks clean were just some of their chores.

The Santa María was the largest ship in Columbus' small fleet, with its 17.7m (58ft)-long deck

CUTTHROAT COLUMBUS

Three of the legendary explorer's most brutal actions

Public humiliation

Columbus and his like-minded brothers, Bartolomeo and Diego, were known for their psychological as well as physical torture. "Columbus' government was characterised by a form of tyranny", says Spanish historian Consuelo Varela. One such case involved a woman who dared to suggest Columbus was of lowly birth. Columbus' brother Bartolomeo had her stripped naked and paraded through the colony on the back of a mule. "Bartolomeo ordered that her tongue be cut out", adds Ms Varela. "Christopher congratulated him for defending the family."

Worked into the ground

When Columbus arrived in the Bahamas in 1492, he discovered a number of peaceful native peoples, most notably the Taino tribe. Columbus himself remarked on how friendly these dark-skinned natives were – they carried few weapons either, since their society bred few if any criminals. He also discovered rich deposits of gold, so he claimed the land in the name of the Spanish Crown and enslaved that very tribe. Within two years, 125,000 – half the population – had died from working in Columbus' mines.

Slavery and mutilation

Columbus was a troubled man, paranoid and deeply suspicious, especially in his later years. According to one report, a man caught stealing corn had his ears and nose cut off at Columbus' request, before being sold into slavery. Enforced servitude became a common course of action for Columbus and his law-enforcing brothers. Columbus himself personally oversaw a sickening trade in sexual slavery, selling young Indian girls and women into a life of brutal prostitution.

The American natives the explorers encountered were initially very friendly and welcoming

COLUMBUS' LEGACY

How the conquistador changed the world

Columbus wasn't the first European to reach North America, but his mark on the world is clear. To quote historian Martin Dugard: "Columbus' claim to fame isn't that he got there first – it's that he stayed." Unlike the small settlements the Vikings created 500 years earlier, Columbus claimed the lands he found in the name of Spain and created significant communities that continued to expand from the coast.

Columbus has a national day in America but the explorer was guilty of some brutal crimes

They had repaid him with a ruined settlement and countless butchered Spaniards.

In Columbus' absence, but very much following his direct orders, Hispaniola had quickly become a far-different place than the one they arrived at. The abundant and peaceful tribes of the island were happy to share the locations of the gold-rich valleys with their foreign guests, but they were less prepared for what came next. Bartolomeo Columbus forced thousands of the natives into slavery, making them dig mines into the mountains, scouring it for precious metals. Hundreds of Europeans brought with them a great number of Western diseases, and such viruses spread through the unprepared natives like wildfire. Such conditions had led the Taino people to lead a rebellion against the foreign invaders, but their actions only galvanised Columbus' own desire for order and retribution.

With his brothers at his side and his Spanish patrons none the wiser, Columbus carved untold riches from the heart of the land. Such riches kept the Spanish monarchs happy, but rumours of brutality would soon spill out across the waves, with reports that Columbus' governorship had sent him mad with power. While reports of his brutality were true, they were seized upon with gusto by the many enemies he had made at the Spanish court, who were jealous of the riches he was making. It is likely his Spanish patrons did indeed have some idea to the lengths Columbus was willing to go to seek his fortune in the New World. However brutal he might have been, his efforts were still filling the coffers of the Spanish crown at a time where war had drunk them dry.

Columbus would conduct a third voyage before Ferdinand and Isabella were forced to send an emissary to investigate the claims that hung thickly over the Spanish court. After receiving the report, they stripped Columbus of his titles and sent the administrator Francisco de Bobadilla to further investigate and govern in his stead. When Bobadilla arrived in August 1500, the land he found was certainly a startling one. Columbus' seven-year rule of the island had enslaved a majority of the island's native inhabitants, which had reduced a population of a few million free people to around 60,000 by 1500. He hears reports of Columbus selling young girls into sexual slavery and complaints that Columbus and his brothers would mutilate and humiliate anyone who stood in their way. The man who now has his own national holiday in the United States was eventually sent back to Spain in disgrace, but the Spanish monarchs did not imprison or hang him; stripping him of their patronage and his titles had nearly broken an already sick and ailing man.

> "Columbus' seven-year rule had enslaved a majority of the island's native inhabitants, which had reduced a population of a few million to around 60,000 by 1500"

Columbus' legacy is defined by his passion for discovery, but some modern accounts are perhaps quick to forget he was a conquistador by name and by nature. Driven by a desire to chart and define the New World, Columbus had not only discovered new lands, he had helped establish a Western footing that would continue to expand for hundreds of years. In his later years he wrote: "By prevailing over all obstacles and distractions, one may unfailingly arrive at his chosen goal or destination." While his actions will always have a shadow over them, his life-long desire to banish the unknown will ensure his name lives on forever.

THE VOYAGES IN NUMBERS

The shocking stats behind Columbus' conquistador career

3,700KM

The distance between the Canary Islands and Japan, according to Columbus' calculations

17

The number of ships, made up mostly of durable, long-distance-ready carrack-style vessels, Columbus used in his second voyage in 1493

19,600KM

The actual distance between the Canary Islands and Japan. Despite the advice of cartographers and geographers, Columbus would not be swayed on his own estimates

11

Number of combined years Columbus spent exploring, with his four main voyages for the mighty Spanish Crown

1,500

The total number of colonists (mainly Spanish, Portuguese and Italian) that Columbus drafted for his first-ever voyage across the Atlantic Ocean

29

During his third voyage in 1502, Columbus lost 29 of the 30 ships he set sail with, after getting caught in a violent storm off the coast of Santo Domingo

10 EXPLORERS WHO HELPED DISCOVER THE AMERICAS

John Cabot

ITALIAN 1450-1499

Exploring the New World in the name of the Tudors

Explored: Newfoundland
Also: Nova Scotia (Canada); Maine (United States)

John Cabot is believed by many historians to be the first European to set foot in North America since the Vikings established Vinland in the 11th century. Under the patronage of King Henry VII of England, Cabot touched down in Newfoundland, Maine and Nova Scotia. Unfortunately, Cabot was neither the sailor nor the captain that Columbus was and his voyages have largely been forgotten.

William Clark

AMERICAN 1770-1838

The man who co-charted and co-claimed the Pacific Northwest

Explored: Oregon
Also: Kansas City, Missouri, Nebraska, North Dakota

Politician. Soldier. Governor. Explorer. William Clark remains one of the most influential men to ever chart his own country. At the beginning of the 19th century, North America was divided between the United States, Spain and France. Following the purchase of Louisiana from the French in 1803, Clark, alongside explorer Merriweather Lewis, led a two-year expedition that mapped a practical route through the wilds of the northern states.

"Elizabeth granted Raleigh a patent to explore the New World"

Henry Hudson

ENGLISH 1560s-UNKNOWN

A China-bound seafarer who stumbled upon New York

Explored: New York (United States)
Also: Newfoundland, Nova Scotia (Canada);

While the particulars of Hudson's personal life remain speculative, his actions as an explorer helped change European understanding of the New World's geographical layout. While attempting to create a direct route to Cathay (the medieval name for China), Hudson accidently discovered what would become New York. In fact, Hudson's mapping of the region was so integral that a river was renamed in his honour.

Leifur Eiriksson

ICELANDIC CA 970 - CA 1020

500 years before Columbus, a Viking discovered the New World

Explored: Vinland (modern-day Newfoundland)

Viking explorer Leifur Eiriksson's travels across the oceans from Scandinavia helped establish a stronghold in Vinland (the Old Norse name for North America). While Icelandic records like the *Saga Of The Greenlanders* point out Leifur wasn't the first Norseman to place a leathered sole on American soil, he galvanised Viking activity in Vinland. Although he died almost a thousand years ago, the fabled Norse explorer left a mark on Scandinavia and North America that still remains. Visitors to St Paul, Minnesota, will see a bronze statue of Leifur standing proudly near the Minnesota State Capitol, with his image symbolising the migration of Nordic people to America.

THE *WORST* EXPEDITIONS REVEALED

Some voyages into the unknown are famous for all the wrong reasons...

600 Spaniards die in the Gulf of Mexico

In 1527, the Spanish Crown sent a fleet to conquer and colonise Florida and the Gold Coast. A mutiny reduced the fleet at the Dominican Republic, while a hurricane drowned hundreds of Spanish sailors. The remaining survivors washed up on the coast of Florida, but many died at the hands of native tribesmen. Of the 600-strong crew, only four returned to Spain in 1528.

Magellan falls foul of the elements

Famous for almost circumventing the globe in the 16th century, Portuguese explorer Ferdinand Magellan miscalculated the size of the Pacific Ocean on a voyage to Asia. Most of his 270-strong crew died of thirst and hunger long before they made landfall on Guam. Those who didn't perish died at the hands of Filipino natives, including Magellan himself.

A fatal race to the South Pole

In 1911, a group of explorers lead by Captain Robert Scott attempted to be the first people to reach the South Pole, but they were beaten in their quest by a Norwegian team led by Roald Amundsen. These five men – Scott, Wilson, Oates, Bowers and Evans – paid the highest price and died. Scott has since been blamed for poor planning but bad luck also played its part as well.

Robert Gray

AMERICAN 1755-1806

A captain who lost an eye, but gained an extraordinary legacy

Explored: California (United States)
Also: British Columbia (Canada); Washington, Oregon.

A merchant sea captain, Gray pioneered the maritime fur trade on the Northern Pacific coast of his home nation, discovering more regions as he pushed trade further up and down that side of the country. He's most famously credited with the first American circumnavigation of the globe, as well as the travelling on and naming of the Columbia River in 1792. To this day, many geographic features in Washington and Oregon bear his name to mark his historical legacy.

James Cook

BRITISH 7 NOV 1728 - 14 FEB 1779

A military man turned explorer who met his end in the new worlds he discovered

Explored: Hawaii
Also: Saint Lawrence River (Canada/United States),

Much like Columbus and Marco Polo, captain James Cook's name is synonymous with early exploration. He began his career as a teenager when he joined the Merchant Navy, seeing action in many naval clashes of the Seven Years War. Cook then used his experiencing charting the Saint Lawrence River during the Siege of Quebec to gain the command of three expeditions around the world. Cook's travels also brought him to the island of Hawaii, where his expert cartography skills enabled him to chart the islands with a detail unrivalled by his peers. He died during a clash with native Hawaiians during this third major voyage in 1779.

Sir Walter Raleigh

ENGLISH 1554-1618

Poet, soldier, courtier, spy, explorer

Explored: North Carolina, South Carolina
Also: Georgia, Florida (United States)

Perhaps one of the most famous explorers save Columbus himself, Sir Walter Raleigh gained favour in the court of Elizabeth I, with his many fabled bounties of treasure and exotic items typifying the Golden Age of the monarch's reign. Following years of war with France and Spain, English merchants were now pushing farther afield into Asia, Africa and the New World. As well as being famous for his pursuit of El Dorado (the City of Gold), Raleigh was instrumental in the English colonisation of North America. In the late-1580s, Elizabeth granted Raleigh a royal patent to explore the New World in the name of the English Crown.

Claude-Jean Allouez

FRENCH 1622-1689

A passionate zealot who explored the New World

Explored: Wisconsin
Also: Michigan, Indiana (United States)

Born in France, Allouez was a Jesuit missionary who travelled to Canada in order to help solidify a series of missions in the region. As part of his religious journey, Allouez regularly came into contact with members of native tribes, which eventually led him south into the future United States. His initial work setting up a number of missions in Wisconsin also coincided with his travels down the Mississippi River. His extensive and detailed notes of the areas he explored helped the French crown to later claim the Great Lakes for themselves.

Hernando de Soto

SPANISH, 1497-1542

This conquistador plundered the South for riches

Explored: Florida
Also: Georgia, North Carolina, South Carolina, Tennessee, Alabama, Mississippi, Arkansas, Oklahoma, Louisiana, Texas (United States)

Much like English seafarer Henry Hudson, the Spanish conquistador Hernando de Soto initially stumbled upon North America while sailing for China. He had set voyage for the East in search of treasure for the financially precarious Spanish Crown, but instead found a land rich with gold and silver deposits, lush and untamed. While he is most famous for having the first documented crossing of the Mississippi River by a foreigner, his expeditions took him to Oklahoma, Georgia, the Carolinas, Tennessee, Texas, Arkansas, Louisiana and Mississippi.

David Thompson

BRITISH-CANADIAN 1770-1857

The "greatest land geographer that ever lived"

Explored: Nevada
Also: British Columbia, Alberta (Canada); Oregon, Montana, Wyoming,

The Westminster-born Thompson headed south from Canada into the wilderness of North America and began uncovering its secrets. Over a career that lasted most of his life, Thompson managed to map a staggering 3.9 million square kilometres (1.5 million square miles) of topography across the Frontier. He started his project around 1793 with his expeditions into the Rocky Mountains, before creating a detailed map of trading posts across the region, including Montana and Idaho. Among other things, the explorer has a highway named after him in Canada.

SPARTA WARRIOR STATE

Written by Ben Biggs

Pain, cruelty and brutal training techniques - life for a boy in Sparta makes the regimen of today's elite forces appear soft. Explore the way of the warrior state through the eyes of a soldier pushed to his physical and emotional limits

> “The thick scars that licked across his back were his trophies and a testament to his honour”

Come back with your shield, or on it.“ These were words that would resonate for any warrior, but for Aristodemus, even the memory of his mother's voice reciting the Spartan rhetoric made him feel deeply ashamed. His hand gripped the shaft of his spear, knuckles whiter and palm slicker than those of his comrades, his focus narrowed to a pinpoint even through the visor of his full helm. This battle was important: retribution against the would-be invading army of Xerxes, for the sacrifice that the warrior king Leonidas and his chosen 300 Spartans made at Thermopylae the year before.

The story of his birth was a minor legend even in his own time: when the ephors - Sparta's elder statesmen - took him from his mother to Mount Taygetos, Aristodemus was small and jaundiced. He was placed in the gorge for starvation, the weather or wild animals to take him - but the Spartan babe had no intention of going the same way as so many other newborns. In that cursed place he clung to ephor Sphodrias' fingers so tightly that he was unable to shake this tiny child from his grasp. Beaten, and seeing the Spartan pup in a new light, Sphodrias had taken Aristodemus back to his mother to be reared at home.

In the light of what Aristodemus was about to do, Sphodrias might well have bashed him against the ground until his hand was released. But the elders weren't around to judge him now, as Aristodemus broke rank and surged forward. One of his fellow hoplites tried to grab him but there was little purchase on his polished bronze cuirass. Besides, Aristodemus was fleet of foot even among his peers. He sprinted toward the advancing Persians, over 30 years of punitive daily training and cruel warrior trials pulsing through his mind.

He must have been three years old when he was left alone for hours in the pitch black of his home, bawling for his mother to light a lamp or to keep

him company, to no avail. Then his mother would come home and temper his body by emptying an amphora full of stale wine over his head until his eyes stung. He'd been half-starved his whole life but it was around this time that the gnawing in his stomach was unbearable. And then, like any other Spartan boy, he was taken away at the age of seven to become a Spartan paidion and to live in the barracks, lest his easy living with his mother soften him.

The next 12 years of his life were spent in the increasingly tough regime of the agoge. Mandatory to all male Spartan citizens except the firstborn sons of the royal houses, it was here Aristodemus was taught stealth, combat and communication among other military disciplines. Above all, loyalty to Sparta was driven into him, to ensure that when the time came, he wouldn't hesitate to put the state before his own life.

Life in the agoge at least made sense of his early youth, even if the Spartan warrior fraternity was brutal. The entire agelai (the 'pack', or class) of Spartan youths Aristodemus was enrolled into were once stripped to the waist and flayed simultaneously – just to try their endurance. Their families watched, encouraging their sons to act like the Spartan warriors they aspired to be, to silently take the pain. After four strokes, Dion (who was particularly skilled at the fight-dance pyrriche and had the hallmarks of a future leader) cried out in anguish. His parents hissed at him from the sidelines and he was disgraced. Meanwhile, Aristodemus was still standing silently after 23 excruciating lashes. As the last paidon standing he had proved his mettle and he was lifted onto the broad shoulders of his trainer while his mother beamed at him. The thick scars that licked across his back were his trophies and a testament to his honour.

A reckless battle-rage now took him as the faces in the Persian front line came into focus. Aristodemus could make out doubt, confusion and even a trace of fear in the half-helms of Xerxes' so-called 'Immortals.' The indomitable form of a Spartan phalanx could break the confidence of the average soldier, but not even the cream of the Persian elite would willingly go toe-to-toe with a Spartan hoplite consumed with wanton bloodlust.

As he closed the final few dusty yards, the hard, bittersweet memories of his teenage years flooded unbidden into his mind. At the age of 13, Aristodemus made the transition from paidon to a meirakion, or youth, and his life became tougher at every level. He was stripped of individuality, his head shaved and he often went unclothed: a Spartan had no need of the trappings of weaker nations, being a Spartan soldier was dignified enough. He slept among his peers in a crowded dormitory on a bed of hard reeds, endured chilly winters and blistering summers and often returned bleeding and beaten from his exhausting daily martial routine. He didn't complain or so much as whimper; he considered himself lucky that a bloody mouth and cracked ribs was the extent of his injuries. The dummy spears and swords they trained with might have been wooden but

> "He was placed in the gorge for starvation, the weather or wild animals to take him"

WHY DID SPARTA CONCENTRATE ON WARRIORS?

Why did Sparta focus on warfare rather than art and literature like most other Greek states?

There's one main reason why Sparta formed a militaristic state of institutionalised warriors while the rest of Greece embraced the arts: the helots. These were a population the Spartans enslaved in the 8th century BCE. Formerly known as the Messenians, their land was rich and fertile compared to that of the Spartans, so they took it from them and forced these new slaves to toil the fields for Sparta. The trouble was, these helots were many times more numerous than the Spartans, were toughened by hard labour and frequently rebelled against their masters. The Spartans needed to control them in the most effective way they knew: by creating a martial government that rooted out the weak and forced everyone left into serving the military, whatever that entailed. Sparta did live in constant feat of a helot revolt, however, and with good reason – at one point they outnumbered the Spartans by as much as ten to one.

MILESTONES OF A WARRIOR

TRIAL AT BIRTH
AGE 0
Spartan boys were put to the test the moment they were born. They were taken from their mothers and brought to the Spartan elders, who decided whether the child would be brought up as a Spartan warrior, or taken to a place known as the apothetae at Mount Taygetos and left to die.

TODDLER TRAINING
AGE 0-6
Early life for a Spartan boy set the stage for a harsh military-oriented future. By frequently being left alone in dark or unfamiliar places and being washed in wine Spartans believed that their children would grow up much stronger than a traditional upbringing would.

TO THE BARRACKS
AGE 7
At around seven years of age they would begin the first of three stages of the Spartan agoge. They became a paidon (a boy) and started their military career in earnest as a part of a pack of young trainees guided by a teacher who would be known as the paidonomos.

MARTIAL ARTS
AGE 10
Though Spartan boys were in training to fight, they were also taught the culture of Sparta and were encouraged to compete against each other in music and dancing, as well as more martial pursuits. At the very least, the Spartans recognised the value of rhythm in combat.

BONDING PRACTICE
AGE 13
Once a Spartan boy finished his 12th year he became a meirakion (a youth) and his training became more rigorous. His exercise was ramped up and he fought barefoot and half-naked. It was around this age that he must bond with an older man – a 'lover' – from whom he could derive guidance.

TRAINING TECHNIQUES

Olympic gym meets military boot camp

As a part of Greece, Sparta incorporated many of their training techniques of their countrymen - some of which are still used by athletes today. The intensity of an exercise could be increased by hand weights or by making them run on sand. Gentle walking as a low-intensity cool-down was reckoned to be beneficial to their recovery and rest days were a vital a part of their conditioning. But there were remarkably cruel aspects to their training too.

Alongside the ritualistic flaying, known as the 'diamastigosis', there was the 'hazing': instructors regularly whipped up rivalries and instigated fights between trainees to harden their minds as well as their bodies. Those who were timid or showed signs of cowardice were pounced upon, teased and beaten by the instructor and other trainees alike. There was no place for these traits in a Spartan youth.

SPARTAN SKILLS

Three dangerous disciplines all Spartan warriors learned

Spear

The spear, or 'dory' as it was known, was a Spartan soldier's primary weapon. It was around 2-2.7m (7-9ft) long, held with one hand, while a shield was held in the other, had a leaf spear head at the business end and a spike on the butt. It took considerable training to use this weapon effectively, as the length and heavy wood the shaft was turned from made it unwieldy in the hands of anyone other than a highly skilled fighter.

Difficulty ●●●●●
Danger factor ●●●●●
Prestige ●●●●●
Usefulness ●●●●●

Wrestling

Pankration (from the Greek for "all might, strength and power") is a combination of wrestling and boxing the Ancient Greeks invented for their Olympics. It has very few rules, the only major fouls being eye-gouging and biting. Kicks, holds, chokes, throws and small limb (finger) manipulation formed a painful part of a Pankration practitioner's repertoire. Its combat effectiveness is renowned and is still practised today by some mixed martial arts fighters.

Difficulty ●●●●● **Danger factor** ●●
Prestige ●●● **Usefulness** ●●●

Sword

The Spartan's xiphos was a close-range weapon of around 30-40cm (12-16in) in length (shorter than the swords of other Greeks), razor-sharp and as quick as it was deadly in a Spartan warrior's hands. In the tight melee of the Spartan phalanx they were far more effective than the weapons of the enemy, penetrating shield walls and inflicting devastating wounds. Given the fervour the state instilled in its youth, it would not be surprising if some were killed or seriously injured while training with the dory, xiphos or the larger bladed weapon, the kopis.

Difficulty ●●● **Danger factor** ●●●●
Prestige ●●●● **Usefulness** ●●●●●

TEENAGE TRIALS

AGE 13-18

During the five years leading up to adulthood, Spartan boys were fed a meagre diet in the belief it would make them tall and strong, and prepare them for future military campaigns with little in the way of rations. They could steal food if they wanted more, but were severely punished if caught.

PASSING ON KNOWLEDGE

AGE 18

When the Spartan boy became an eiren (adult) he would spend his first year helping to train other youths at the barracks before moving to a mess with around 15 other, unmarried young Spartan soldiers. It was around this age he may have been sent on missions to kill unruly helots.

SECRET SERVICE

AGE 20-30

At some point after becoming a full member of the Spartan army but before their 30th birthday, a Spartan soldier was liable to two years in the kryptei, what was essentially the Spartan secret service. Part of their duties would have been to maintain control of helots in rural areas.

GOT THE VOTE

AGE 30

Spartan boys were only really allowed the full privileges of adulthood within their society after their twenties. They were now finally allowed to marry or talk to other Spartans in the marketplace. Also, they could now vote and be voted in to hold a post in office.

RETIREMENT OF A SORT

AGE 60

If a Spartan became a weak link for any reason, they could be retired from their current post on the front lines and given more menial duties. Older Spartan soldiers up to the age of around 60 were often sent to the rear for tasks such as to guard the baggage train on long campaigns.

Spartans were extremely well-trained and ruthless warriors

THREE GREAT VICTORIES

A small selection of Sparta's greatest military successes

Plataea 479 BCE
Who did they fight? Persia (Mardonius)

Having retreated back into Persia, Xerxes left it to his general Mardonius to tackle the Greek city-state alliance. An 11-day stalemate culminated in a withdrawal by the Greeks to resupply. This was taken as a full retreat by Mardonius and proved a fatal error. Spotting the enthusiastic - and reckless - Persian advance, the Spartans and other Greek armies halted their withdrawal and trapped a significant portion of the Persian infantry, routing them. The tide of the battle turned and the Persian invasion was repelled.

Thermopylae 480 BCE
Who did they fight? Persia (Xerxes I)

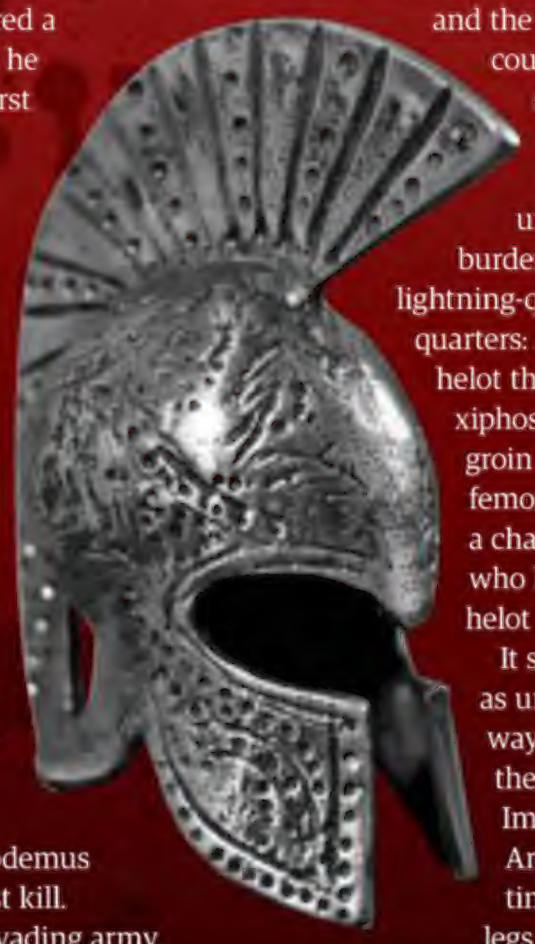
Of course, the defeat of the Spartans at Thermopylae at the hands of the Persians is well documented. Around 4,000 other Greek soldiers along with 300 Spartans held the narrow pass of the Hot Gates before their position was compromised by the Persians, and Leonidas decided to turn away all but his own men and around 1,000 other soldiers. However, their sacrifice bought time for the rest of the Greek forces to retreat and for the Greek cities to prepare for the invasion. It bolstered the morale of the other Greek states and ultimately contributed to Xerxes' army's own retreat back into Persia.

The Peloponnesian War 431-404 BCE
Who did they fight? Athens

Spanning nearly 30 years and punctuated by a brief truce, the culmination of this protracted war resulted in one of Sparta's greatest victories. Ironically, Sparta received some support from its old enemy, the Persians, as well as from its allies Corinth and Thebes, to make the final push on the powerful Athenian navy. Athens was crushed, the former major power in Greece was reduced to a slave-state and Sparta became, for a time, the leading light of the Greek city-states.

they were no mere toys. One of his fellow agelai, Procles, let his guard slip for just a fraction of a second, enough for his sparring partner to exploit the opening and deliver a blow to Procles' temple so furious that he died on the spot. There was no mourning - Procles was obviously not cut out to be a Spartan soldier.

And now Aristodemus whispered a brief prayer to Apollo and Ares as he breached the Persian lines. The first Immortal he met didn't come close to living up to the title of his rank. Aristodemus used the momentum gained from his maniac charge to plough his spear straight through his shield and pierce his throat. He didn't even attempt to retrieve his weapon from the Persian's body, the close range was ideally suited to his xiphos, a deceptively short sword that was deadly in the hands of a Spartan worth his salt. The next Persian to fall had somehow turned his flank to the maddened Spartan.



Buzzing with adrenaline and a catharsis of emotion, Aristodemus re-enacted the memory of his first kill. This was not a soldier from an invading army, but a helot slave gathering fruit in a vineyard. Spartans would encourage their youths to steal to supplement their poor diet, to make them stealthy and cunning. If they were caught, they were usually beaten or whipped: the punishment was not for stealing, but for being caught. By the time he was approaching manhood, this trial had taken a darker path. Signs of resistance were rippling through the helot slave community so the ephors used this opportunity to kill two birds with one stone. To nip any chance of revolt in the bud and to hone the blooming talent for violence their youths had began to exhibit, the ephors gave Aristodemus and a handful of others some meagre rations, a xiphos and the simple order go into the Greek countryside, to stalk and kill a helot slave. Preferably a big one.

It took Aristodemus a day to choose his target and then wait until the big man was alone and burdened with grapes. The attack was lightning-quick and came from unexpected quarters: Aristodemus ambushed the helot the way he'd been taught, his xiphos cleaving deep into the man's groin three times, severing the femoral artery and barely giving him a chance to acknowledge his attacker, who had fled the scene before the helot collapsed.

It seemed the Persians were almost as unused to the savagely efficient way the Spartans could wield their weapons as the helots. This Immortal looked dumbstruck as Aristodemus' blade flashed three times in the sunlight, before his legs gave way following a torrent of blood spilling onto the battlefield.

The Persian front line was done absorbing Aristodemus' suicidal charge, and now it was time for the lines to close and repel this wayward Spartan. In the ensuing melee, a cut he inflicted to a Persian's head blinded one of his opponents.

An eye for an eye. Now that felt more like

> "He hanged himself rather than face the shame Aristodemus experienced on his return to Sparta"

redemption. Thermopylae had never been far from Aristodemus' mind this past year, but the memory of his disgrace now came back to him with the same vigour of his battle fury. Having survived two days at the narrow pass of the Hot Gates, Aristodemus' eye became infected, effectively blinding him. To King Leonidas, he was now a weak link and a liability to the effectiveness of his war machine. He was denied the honour of fighting for what would be the final, fateful day and was sent back to Sparta along with another unfortunate soldier, Eurytus, who suffered the same affliction. Halfway home and realising what they would face upon returning alive and without the honour of victory, Eurytus decided to return to the Hot Gates and meet his fate. Aristodemus followed the orders of his king, however, and suffered a worse fate than his kinsmen at Thermopylae. He was snubbed, branded 'Aristodemus the coward', free Spartans could strike him in the street with impunity (though few dared put that law to the test), while no man could offer him shelter. It would have been the lowest ebb for any Spartan and yet, Aristodemus could still fight for Sparta – he could still redeem himself. Maybe it would be here, at the Battle of Plataea, with this final act of heroic abandon? Or if the black mark wasn't struck from his name, then his death would at least end the pain of his dishonour.

Aristodemus was one of only two survivors from the famous battle of Thermopylae. The other, who arrived too late at the final battle, hanged himself rather than face the shame Aristodemus experienced on his return to Sparta. This made Aristodemus the only veteran of Thermopylae to fight in the Battle of Plataea, and goes some way to explaining why contemporary Greek historians picked out this particular soldier.

The story of Aristodemus is the embodiment of the highs and lows of the Spartan way. From an early age, they were forged into superhuman fighting machines through a merciless training regime and the denial of some of the most basic of human needs – whether that was a square meal or the love and attention of their parents. Boys were broken down and taught to live by their wits, to rely only on other Spartan soldiers, especially their 'lovers' – the dubious title given to their adult guardians. The ancient city-state of Sparta has earned a legendary status today because it was pathologically willing to trade a normal life for its own sons in order to create an army the ancient world would tremble before.

Aristodemus threw his life away at Plataea and his peers afforded him no special honour as a result. But Sparta recognised the fury and strength with which he fought, which saw him kill several Persians before he fell. So in the eyes of his people, in the ethos of the brutal warrior state of Sparta, he had finally redeemed himself.

A depiction of a Spartan woman giving a shield to her son

FACT OR FICTION: IS THIS SPARTA?

300 defended Thermopylae

King Leonidas and 300 of his chosen Spartan warriors single-handedly held off a Persian army of 100,000 at Thermopylae for three days, fighting to the last man before they succumbed.

VERDICT

FICTION

There were approximately 300 Spartans, but they were joined by thousands of other Greeks.

Women trained too

Spartan women also had a rigorous training routine and competed in athletics and gymnastics against boys. It was believed it was important for women to be physically fit to bear children.

VERDICT

FACT

For the time, women were held in very high regard in Sparta.

Ephors were evil

The ephors (elders) of Sparta were a group of powerful and lecherous old men who left Spartan newborns to die and demanded great sums of money for their wisdom, which the kings of Sparta valued greatly.

VERDICT

FICTION

They were simply elders who held power and respect in Sparta.

15 SPECTACULAR SPARTAN FACTS

4,300

The estimated number of Greeks who fought at Thermopylae

371 BCE

Sparta is defeated at the Battle of Leuctra, marking the beginning of the decline of the warrior state

NO SHOES

Spartans wore no footwear, not even in battle. The only time their feet were covered was to protect them from thorns in hunting and from the cold in winter

20,000

The estimated number of Persians who died at Thermopylae - five times the number of Greeks

SPARTA ENSLAVED A PEOPLE

The helots were a group of people completely subjugated by the Spartans

12 YEARS OLD

The age at which Spartan youths were stripped, shaved and encouraged to steal to eat

10,000

The early military Sparta, as conceived by its creator Lycurgos, had 10,000 soldiers in its army

SPARTA HAD TWO KINGS

Both of Sparta's kings were derived from the two great houses of Sparta and during war, one would fight alongside the Spartan army while the other would protect the throne at home

'SPARTAN' IS AN ADJECTIVE

It means simple and frugal and is derived from the nature of the Ancient Spartans

300,000

The top-end, modern estimation of the size of Xerxes' army at Thermopylae - over ten times the number of Greeks

ANCESTRAL ARMOUR

Spartan soldiers were expected to provide their own weapons and armour, so these were often passed down from father to son

FEW HAD GRAVESTONES

Sparta honoured the death of only two types of people with gravestones, both who were considered to have given their lives for Sparta: soldiers who died in battle and women who died during childbirth

NO SURRENDER

Capture was one thing, surrender was entirely different. Spartans were expected to fight to the death and to do otherwise was to shame Sparta

1000 BCE

The date Sparta was founded

PHALANX POWER

The Spartans and the other Greek city-states used this formation in battle to great effect during ancient times

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Who is greatest military tactician to have lived?

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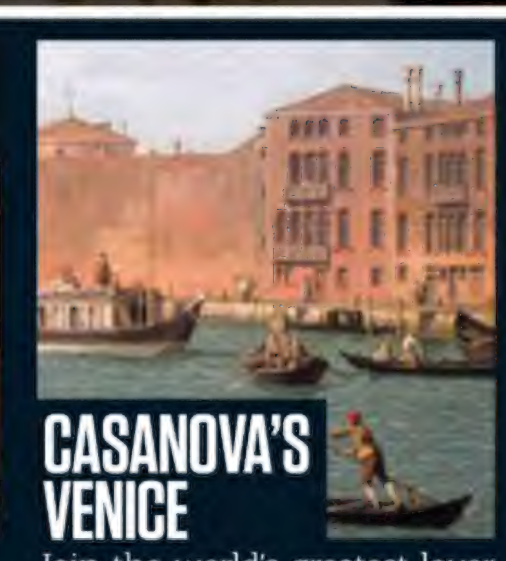

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The desolate scene at the Hindenburg Line, where Allied soldiers like Frank and Jack Saunders fought Central Powers' soldiers

AMAZING STORIES

Adventure down under

In their later years Frank and Caroline travelled around Australia

Larelle Saunders

Frank Richard Saunders was born on 10 April 1896 in Weymouth, England. He was raised on Elworth Farm in Portesham and at the age of 17 in 1913 he sailed out to Australia with his older brother Jack to start a new life. His first job in Australia was milking cows while his brother Jack had a job cutting timber in the same area with a man named Gunbolt Brown, who was later killed when the Japanese bombed Darwin. Frank later moved north to Kingaroy in Queensland to work milking cows by hand and his brother Jack also worked in the same area on a farm.

In 1914, Frank read a notice in the newspaper for land selection in the Dawson Valley and set off on horseback to look for land in Central Queensland – a long ride on a horse through the Australian outback. On arrival a man drove him around the area to look at available land for selection and finally Frank decided on portions 123 and 124. These blocks were named Thendara, were approximately 576 acres (233 hectares) and are presently the home of Robert Saunders, Frank's youngest son. The first priority for Frank was to build a hut and put a tank in place for drinking water. He cut 70 acres (28 hectares) of scrub, burned and fenced it to keep out wallabies, and also planted cotton. Money was scarce at the time so Jack, who was still working in Kingaroy, would send a portion of his wage to Frank.

At around this time World War I had broken out and many young men were signing up. In February 1916, Jack enlisted in the Light Horse Mounted Cavalry and Frank became a member of the Infantry 52nd Battalion as a Lewis gunner. Frank celebrated his 21st birthday on a ship between Australia and the Middle East en route to training in Palestine and the Egyptian desert. The 52nd battalion joined the battlefront in France and after 18 months of extremely heavy fighting against the German army, Frank was badly injured and thought to be dead. A fellow soldier carried him off the battlefield and he was transported to an army hospital in England for 18 months and then back to Australia for seven months to recuperate.

While Frank was at war his neighbours, the McCraes and other locals, picked his crop of cotton and sent it to the ginnery. On returning home his neighbours presented him with a cheque for his crops and together with his army pay he was

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Frank Saunders relaxing later on in his life

able to operate the property again. Frank and Jack worked in partnership, growing cotton and farming to provide income and develop and expand the original block. Each year, more land was added, more crops grown and a dairy herd was added. In 1921 Jack married Caroline Pitman and they had five children; Neville, Beryl, Trevor, Robert and Nancy.

Frank was a very active member of the community who held many different positions and was awarded life membership to the RSL for his service in World War I. Frank and Caroline returned to England in 1948 by sea, which took ten months, and in later years they bought a caravan and travelled around Australia, the place they had both happily called home for so many years.

Do you have family history to share?

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"At around this time WWI had broken out and many young men were signing up"

An Australian recruitment poster, first created in 1916

WWI poster promoting enlistment for the Australian Imperial Force (AIF), 1915

HISTORY ANSWERS

Send your questions to **questions@historyanswers.co.uk**

Early medieval cannons were crude, but were often effective during sieges

When was the first war cannon used?

Aaron White, Cornwall

Some form of hand-cannon-like weapon was used in East Asia as early as the 12th century. Gunpowder was being developed by the Chinese as far back as 300 CE, but the earliest recognisable cannons to be used in combat came much later, during the events of the Spanish Reconquista.

During the 13th century, Christian Spaniards were still waging a war of reconquest against the Moors, who had occupied much of the Iberian Peninsula since the 8th century. A gunpowder weapon called a madfaa was used by the Moors during many of the sieges in this period, including Saragossa, Cordóba and Gibraltar. Though extremely crude – it was essentially a bowl of tightly packed gunpowder with a projectile balanced precariously nearby – this gave way to the French 'pot de fer', or bowl of fire.

> "The noise alone was enough to weaken morale"

One of the earliest and most famous accounts of a cannon being used on a European battlefield comes from the Battle of Crecy in 1346. English King Edward III's forces included five cannons, which were laid on the ground and fired stone balls. Though much more similar in appearance to later cannons, these weapons were inaccurate and had little direct damage on the enemy. However, the noise alone was enough to weaken the morale of the French Army and its Italian mercenaries, who likely had never seen such a terrifying display of force before.

Why were samurai swords so strong?

Ben Reacher, Derby

Traditional Japanese katanas are famed for their incredible strength and cutting ability. Methods of making and perfecting these blades were developed in Japan as early as the 5th century. Steel-producing techniques were brought over from China and Korea, while the iconic curve of the swords is thought to have been influenced by Arabic-style weapons. There were several key periods in the history of Japanese sword production, including Jōkotō (ancient swords) and Shinshinto (new swords).

Using native Japanese steel, called Tamahagane, swordsmiths were able to gradually refine and purify the make-up of the blade by repeatedly folding the metal up to a dozen times. This is where the finished swords got their immense strength, which would be tested numerous times to ensure the steel contained no imperfections. The making of these swords declined during the 19th century as Japan steadily turned away from its samurai past and embraced Western culture, where guns, rather than swords, became the weapons of choice.

Strong Tamahagane steel was used to produce all manner of samurai weapons

This day in history 18 September

14 CE – Tiberius becomes emperor
As the stepson of Rome's first emperor, Augustus (who was himself an adopted son of Julius Caesar), Tiberius is named successor when his stepfather dies. He goes on to reign until 37 CE, when he is succeeded by the notorious and infamous Emperor Caligula.

1502 – Columbus lands on Costa Rica
Italian-born explorer Christopher Columbus lands on Costa Rica during his fourth and final voyage to the New World. The discovery that the native tribes wear gold jewellery earns the land its name, meaning 'Rich Coast.'

1709 – Samuel Johnson born
Born in Staffordshire, Dr Johnson will go on to publish one of the first definitive dictionaries of the English language in 1755. He will also become a prolific and respected author and leading scholar of English literature.

1793 – US Capitol built
George Washington lays the keystone to the United States Capitol building's southeast corner, signifying the start of construction. The building will not be completed until well into the 19th century.

WHO WAS THE FIRST ROMAN EMPEROR?
Augustus

Did Emperor Caligula make his horse consul?

Tim Moore, London

There are many bizarre and disturbing accounts of the short reign of Gaius Caesar Germanicus, otherwise known as Caligula. He is infamous for being the maddest emperor in Rome's history and among the tales of wild orgies and murdering on a whim, he's also said to have made his horse the consul of the Senate. While Caligula did love his favourite horse, named Incitatus, there's no hard evidence to suggest that he was actually given such a high office.

Caligula did give his horse a marble stall, an ivory manger and a jewelled collar

EMPEROR CALIGULA
12-41 CE, Roman

Brief Bio

Caligula was born in Antium, son of famed general Germanicus Julius Caesar (not the one killed in the Senate), who was the nephew of Emperor Tiberius. After the death of the emperor in 37 CE, Caligula inherited the throne, but would only reign for five years before being assassinated by his own Praetorian guard.

Nicolaus Copernicus suggested a Sun-centric interpretation of the Solar System

Who was the most important astronomer?

Dennis, Milton Keynes

Stargazing likely goes back as far as humanity itself, with our ancient ancestors staring up at the wonders of the cosmos. However, it was Polish astronomer Nicolaus Copernicus who changed science forever when he wrote *De Revolutionibus Orbium Coelestium* (*On The Revolutions Of The Celestial Spheres*).

Published in 1543, this seminal work detailed Copernicus' theory on the positions of the Earth, Moon, Sun and all the planets. Contrary to the popular belief, Copernicus showed that it was the Sun, not Earth, that is the centre of the Solar System, with all the planets orbiting around it. This heliocentric system, as it is known, was a revolution in the history of astronomy.

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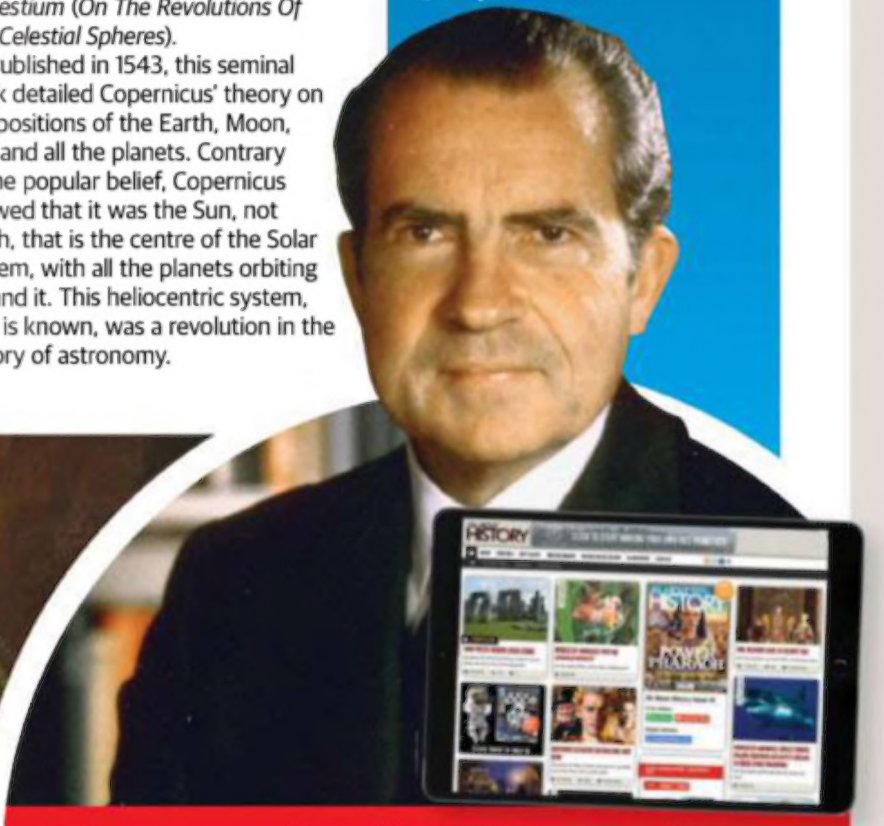
What were the 1707 Acts of the Union?

Sarah Richards, Minnesota

Though the two crowns of England and Scotland had been merged when James VI and I inherited the English crown from Elizabeth I, the two countries weren't unified until nearly 100 years later. It was the last reigning Stuart monarch, Queen Anne, who saw the Kingdom Of Great Britain created under the 1707 Acts of the Union. This established a political and economical union between the two countries, opening up the wealth of the English colonies to Scotland.

Queen Anne was the last Stuart monarch and was the first Queen of the Kingdom of Great Britain



Who was the first US president born in the USA? **Find out at...**
historyanswers.co.uk

1810 — Chile declares independence
The Chilean War of Independence begins after Napoleon Bonaparte imprisons King Ferdinand VII of Spain. This crisis of authority leads to a junta being formed independent of Spain and the war for full independence rages for eight years.

1812 — Moscow burned to the ground
Fires set deliberately by Russian saboteurs, which have almost entirely destroyed the Russian city in four days, are finally quenched. Napoleon and his French occupation forces leave the city a month later.

1914 — Battle of Aisne
German First and Second Armies continue to defend against Allied forces in the First Battle of the Aisne –it is one of the first battles in the long, gruelling slog of trench warfare.

1976 — Mao Zedong funeral
The leader of the People's Republic of China is mourned in a three-minute sounding of horns and sirens all over the country. Rather than being cremated, Mao is preserved in his own mausoleum.

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HISTORY VS HOLLYWOOD

Fact versus fiction on the silver screen

U-571

Director: Jonathan Mostow
Starring: Matthew McConaughey, Bill Paxton, Harvey Keitel **Country of origin:** USA **Year made:** 2000

How well is the truth disguised in this tale of WWII heroism?

What they got right

The plot is so fictitious that former British PM Tony Blair dubbed it an "affront" to British sailors. The only glimmer of the real historical events is just before the end credits when the true missions and heroes are referenced in rolling text.

May 9, 1941
Enigma machine and coding documents
captured from U-110 by HMS Bulldog
and HMS Aubretia of the 3rd Escort Group
October 30, 1942
Short weather cipher captured from U-559 by
HMS Petard

WHAT THEY GOT WRONG...

01 At one point the US sailors are wearing dress uniforms, but their ribbon bars for awards didn't exist in 1942, the time setting of the film. When in disguise, the US soldiers are also seen wearing German uniforms with swastikas on the wrong sides of their shirts.

02 In the film, the German submarine U-571 is captured. But in reality the submarines involved were the U-559 and U-110 and they were captured by the British Navy in August 1941, about four months before the US even entered the war.

03 The destroyer shown in the film is the Z-49, but this would be impossible. This ship was planned by the Germans but never actually built. Even if it had been built it wouldn't have been finished until late in the war, long after the events in the film took place.

04 At one point the German soldiers are shown firing on a lifeboat full of survivors. Not only were the Germans forbidden to kill unarmed Allied officers, but there are no records of any such executions by the German Kriegsmarine in WWII.

05 A stop sign is shown at the entrance to the Naval yard but it does not fit the stop signs of that era. Rather than being the well-known, modern red with white lettering, the stop sign in the film should have been coloured yellow with black lettering.

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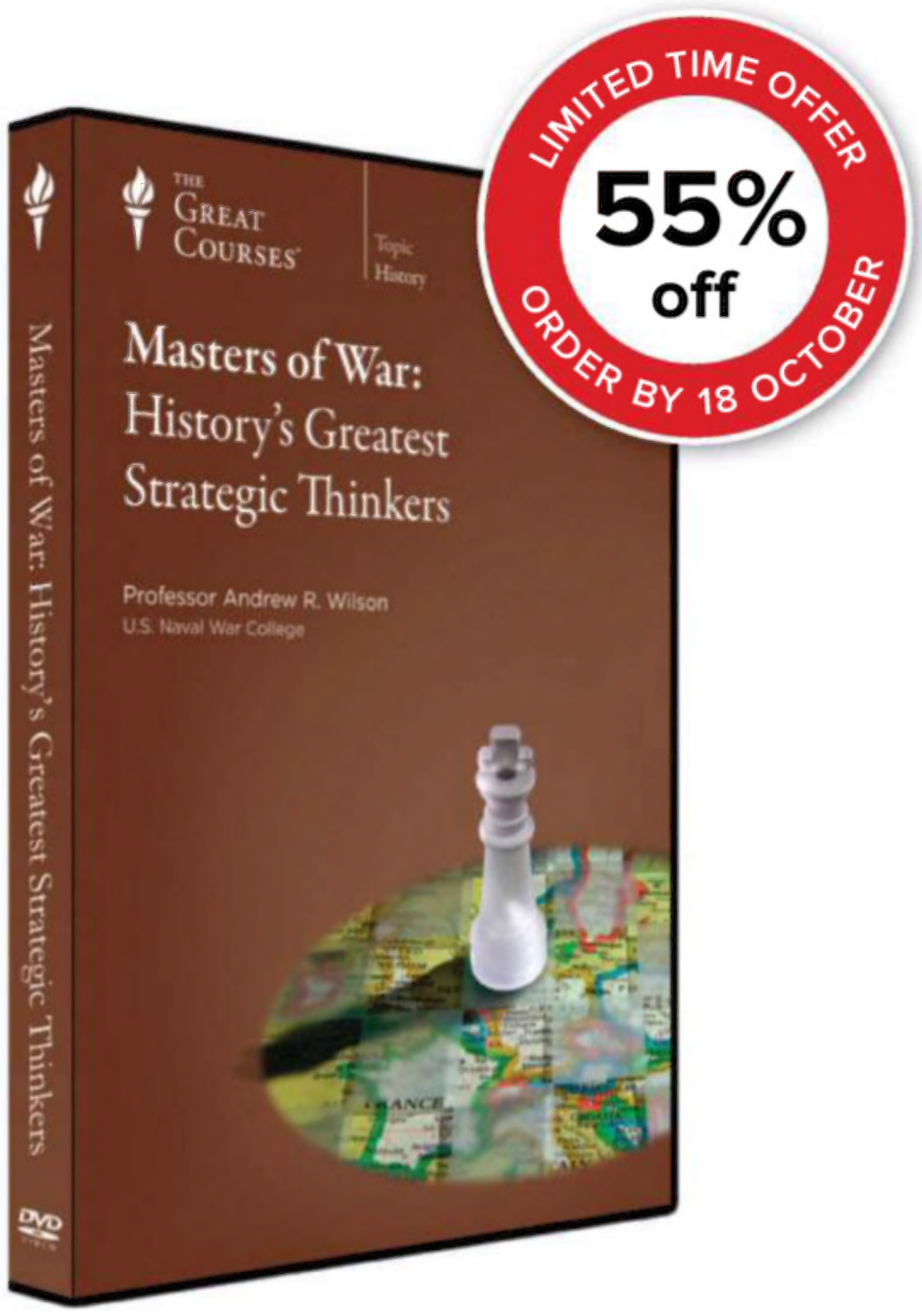

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